DOCUMENT RESUME

ED 143 770 CE 009 991

TITLE	Physician Assistant. Curriculum Resource Document. Volume II: Curriculum Resource Guide. Final Report.
INSTITUTION	American Academy of Physicians' Assistants, Arlington, Va.
SPONS AGENCY	Health Resources Administration (DHEW/PHS), Bethesda, Md.
PUB DATE	24 Dec 76
CONTRACT	HRA-231-75-0209
NOTE	181p.; For a related document see ED 134 815
EDRS PRICE	MF-$0.83 HC-$10.03 Plus Postage.
DESCRIPTORS	*Curriculum Design; *Curriculum Development; Educational Objectives; Job Skills; Medical Education; Medical Students; *Physicians Assistants; Post Secondary Education; *Primary Health Care; Resource Materials; Student Evaluation; Teaching Methods; Technical Education

ABSTRACT

Designed as an educational resource for those involved in training physicians assistants, this curriculum guide is the second volume of a two-volume report of a project which had two major purposes: to further develop a role delineation for the assistant to the primary care physician and to provide an education resource for those involved in training physician assistants. The purposes of the guide are two-fold: (1) to demonstrate how the role delineation (presented in volume I) can be used to develop curricula and (2) to provide, through a sampling of possible objectives, learning opportunities, teaching strategies and methods for appraising student performance, and resource information on curriculum development activities. The first half of the guide contains sections on curriculum, model for curriculum development, defining curriculum, curriculum objectives, samples of behavioral objectives and teaching strategies, and learning opportunities and methods for appraising student performance. Appendixes (second half of the guide) contain similar materials not developed as part of the project but collected from other programs. Selected bibliographies on educational curriculum development activities and of textbooks used in physician assistant training programs are also included. (LAS)

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ED143770

FINAL REPORT

PHYSICIAN ASSISTANT

CURRICULUM RESOURCE DOCUMENT

VOLUME II

CURRICULUM RESOURCE GUIDE

Prepared for

Health Resources Administration
Department of Health, Education, and Welfare

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Under

Contract HRA 231-75-0209

December 24, 1976

AMERICAN ACADEMY OF PHYSICIANS' ASSISTANTS
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CE 009 991

VOLUME II

CURRICULUM RESOURCE GUIDE

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* These materials were not developed under this contract.

I Selected Bibliography of Textbooks Used in Physician Assistant Training Programs

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*GLOSSARY

* These materials were not developed under this contract.

ACKNOWLEDGEMENTS

This report could not have been carried out without the input, support and active participation of many people. The members of the Working Committee spent many long and tedious hours between meetings developing and evaluating the materials developed under this contract. The project's consultants also spent long hours developing and reviewing many of the educational materials found in this report as well as providing support and direction to the project staff.

Dr. Margaret A. Wilson, the Health Resources Administration Project Officer was particularly helpful and supportive. She provided much of the direction and advice necessary for carrying out this project.

The project staff would like to thank the members of the Association of Physician Assistant Programs for not only providing their curriculae, but for their continual enthusiasm and support of this work.

The project staff also acknowledges the special contribution of Ms. Susan Herre in helping prepare the final report.

Finally, a special acknowledgement is made to the physician assistant, whose dedication to the profession helps make this work worthwhile.

Donald W. Fisher, Ph.D.
Judy A. Light

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IV. CURRICULUM RESOURCE GUIDE

Educational programs should be designed to prepare graduates to meet presently identifiable health care needs, as it is believed that continuing education activities can be designed to prepare the practitioner to meet future needs. The development of a curriculum for the education of physician assistants necessitates consideration of these points as well as: (1) the entry level role of this person; (2) the relationship of the program to the continuing education of the graduates; (3) the concept of team care; (4) potential opportunities for career mobility; (5) the responsibilities of the physician assistant in provider-patient relationships; and (6) the relationship of the physician assistant to the supervising physician. Educational programs preparing persons who must be continuing learners must likewise provide the student with the skills of continued learning.

Consideration also must be given to the breadth of the patient care roles. Preventive care as well as curative medicine are necessary components of any curriculum which must educate students through the steps of problem solving: data gathering, evaluation of the data base, diagnosing common problems and referring the more complex, selecting drug therapies, and other treatment management including health education. One of the uses of a role delineation is to provide information about these points in a clear and concise manner.

This document, to be used as a resource for curriculum developers for physician assistant programs, has attempted to incorporate the above concepts in the hope that future curricula will be flexible enough to allow entry of a heterogenous group of students by allowing the curricular program to be individualized as much as possible.

The purpose of the Curriculum Resource Guide is to provide suggestions and examples of how the Role Delineation can be used in developing and evaluating curricula for educating Assistants to the Primary Care Physician. The Role Delineation describes the entry level performance and responsibilities in which physician assistants are expected to be able to demonstrate competency. It is not the intent of this document to describe what should be taught to physician assistant students or how it should be taught; rather, the purposes of this guide are two-fold:

1) to demonstrate how the Role Delineation can be used to develop curricula; and

2) to provide, through a sampling of possible objectives, learning opportunities, teaching strategies, and methods for appraising student performance, resource information on curriculum development activities.

Accreditation of Physician Assistant Programs

The American Medical Association's Council on Medical Education has a long history in the accreditation of medical and allied health educational programs. Historically, standards for educational programs are developed by medical specialty

organizations in cooperation with the professional organizations representative of the allied health disciplines.

Minimum standards for programs educating the Assistant to the Primary Care Physician were developed through a collaborative effort of the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Society of Internal Medicine and adopted by the American Medical Association House of Delegates in December, 1971.* These four organizations sponsored the initial accreditation review body (the Joint Review Committee) and in March, 1973, appointed three graduate physician assistants to serve as members-at-large. In 1974, the American Academy of Physicians' Assistants became the fifth sponsoring organization of the committee. The American College of Surgeons' review committee merged in September, 1975, with the Joint Review Committee on Educational Programs for the Assistant to the Primary Care Physician to form the Joint Review Committee on Educational Programs for Physician's Assistants.

In February, 1974, the Joint Review Committee proposed and the American Medical Association's Council on Medical Education adopted the Guidelines for Educational Programs for the Assistant to the Primary Care Physician** which describes how the Essentials are interpreted and allow for different approaches to designing and conducting educational programs for educating physician assistants.

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* The Essentials of an Approved Educational Program for the Assistant to the Primary Care Physician can be found in Appendix B.

** These may be found in Appendix C.

A. Curriculum

There are many ways to define curriculum. Some definitions are very broad, referring to the total student experience; others are very narrow, referring to the acquisition of knowledge within a specific course. In the context of this document, curriculum refers to the entire learning experience, to include:

1) the goals of instruction;
2) the content to be studied;
3) the methods of instruction; and
4) the evaluation of instruction.

The intent of this guide is to provide information to program planners about these four curriculum components and to illustrate how these components interact with each other when one is developing curriculum.

No attempt has been made to recommend any standardized curriculum other than to present, as defined by the Role Delineation, a description of the minimum basic competencies the practitioner needs to enter the profession. It is recognized also that individual programs would and could establish higher levels of competencies and/or teach other skills. These decisions remain the responsibility of individual program planners.

B. Model for Curriculum Development

The types of curricula presently being used by physician assistant programs vary in their approaches to educating physician assistant students. Some programs offer separate courses in such areas as Anatomy and Physiology; others present all pertinent information by system. This Guide does not advocate or endorse any one approach or individual program.

This Curriculum Resource Guide presents a systems approach rather than a course approach to curriculum development activities, not because this approach is necessarily more effective, but because a systems approach better illustrates the purposes of the Curriculum Resource Guide. None of the illustrations (e.g., objectives, methods for teaching, and methods for appraising the learner's performance) should be considered as either comprehensive or absolute. Their purpose is to illustrate how to use the Role Delineation in developing curricula and how to identify appropriate teaching and appraising strategies: they were developed with the philosophy that its users would make additions and/or deletions which best serve the needs of their individual programs.

Models for curriculum development should not be perceived as tools for dictating curriculum. Process is the key word in the development of a model for educators. The Role Delineation, objectives, teaching strategies, learning opportunities, and evaluative techniques illustrate a method for planning and developing a comprehensive system approach to curriculum. Individual program differences are

the key to the discovery of more effective teaching and learning methodologies since each program must take into account its own goals, types of students, and resources.

Since this Role Delineation defines the outcomes of instruction, to discuss curriculum development activities without including some guidelines for utilization of the document at the program level would indeed be worthless. In order to identify means for developing new curricula or modifying existing curricula based on the Role Delineation, the following procedure is recommended:

1) Review, by program consultants, instructors, and staff, the Role Delineation to identify areas not presently included in the curriculum.

2) Write objectives for areas within the Role Delineation.

3) Identify teaching strategies, learning settings, and evaluation techniques.

4) Identify or develop courses which best meet the criteria established.

5) Monitor and continuously evaluate courses and recycle information into the development of new course objectives for curriculum development.

C. Defining Curriculum

It is generally agreed that the first step in curriculum development activities should be to assess needs; that is to identify that there is a need to educate someone competent in the proposed skills. Most professions come into existence because a

need has been previously identified that requires expert help. The physician assistant is no exception. The need for this mid-level health practitioner as part of the solution to extending health care services has been frequently demonstrated.

Once a need is established, the question of "what should this person be able to do?" must be answered, for this provides the answer to "what are the goals of instruction?". The Role Delineation for the Assistant to the Primary Care Physician establishes the goals of instruction, in that it describes the minimum basic competencies and responsibilities of the practitioner. Programs that wish to train physician assistants must develop curriculum to prepare persons who can function as the practitioner described in the Role Delineation.

In developing curriculum one usually proceeds in the following fashion:

1) Develop and define the outcomes of learning as behavioral (terminal) objectives that represent the content to be taught. It is only be stating the outcomes of learning in observable terms that one can measure whether the student has acquired the desirable behaviors.

2) Identify the curriculum approach to be used. This decision is somewhat dependent upon the structure of the institution in which the program is being developed.

3) Define the enabling objectives; that is to define all the behaviors that must be acquired by the learner in order to attain the terminal objective. For example, a terminal objective for a physician assistant curriculum might be: "The student is able to elicit a pertinent history." This "terminal" objective requires many enabling objectives to describe the knowledge and skills which must be acquired by the student.

4) Identify which type(s) of learning are required by each objective and in what order they should be presented.

5) Identify the procedures, content, and methods relevant to each objective.

A model illustrating these activities can be found in Figure I. This model separates those activities that are the responsibility of the profession, naming the development of a role delineation and certification examinations, from the actual curriculum development activities, which are the responsibility of the program.

D. Curriculum Objectives

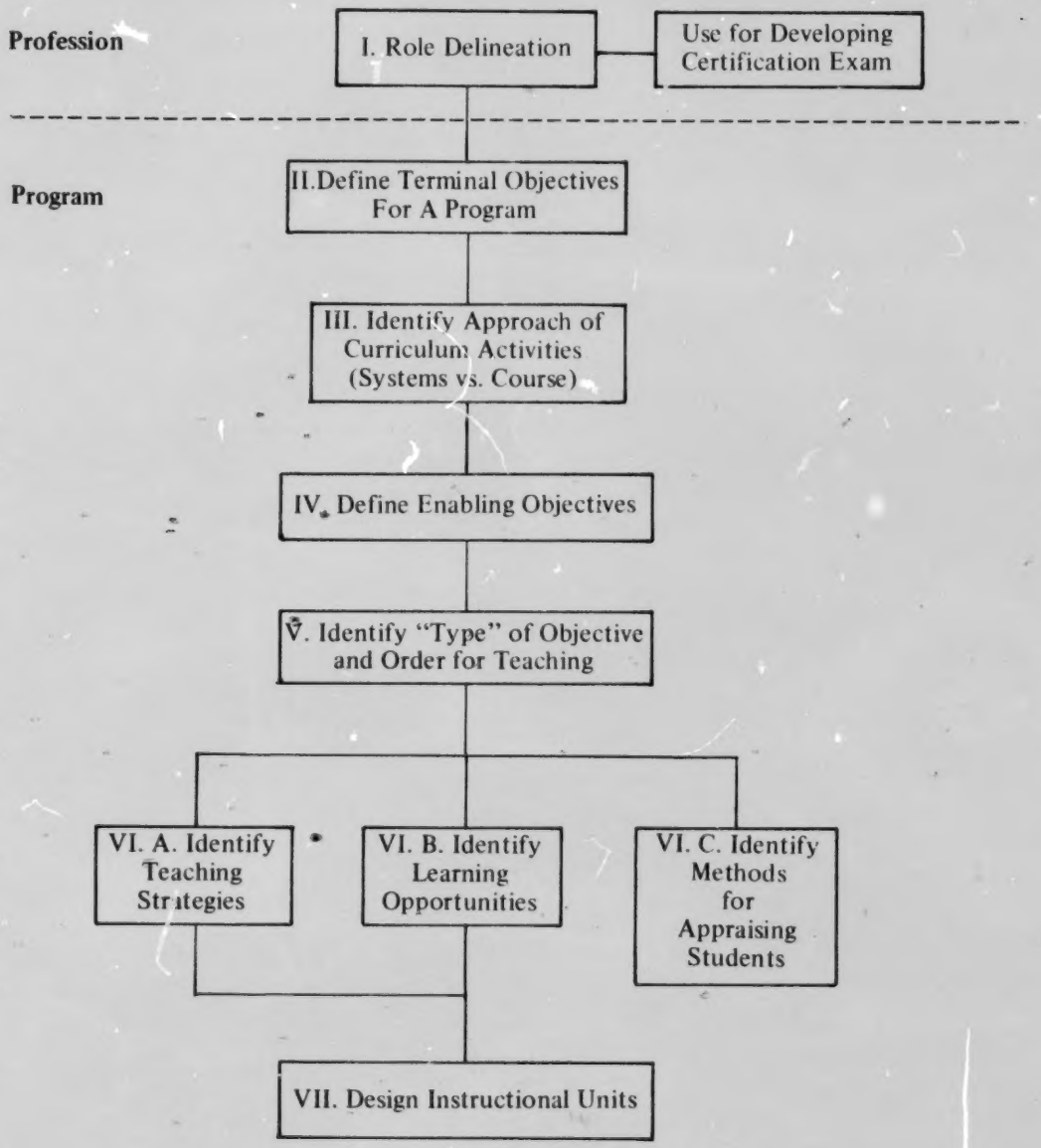
Education is often defined as the process which changes the learner. Each program, course, and unit of instruction should bring about some significant change or changes in the student. The purpose of defining objectives is to identify the changes that are expected to take place; the purpose of appraising the learner's performance is to identify what changes have taken place. Two types of objectives are referred to in this document: terminal objectives and enabling objectives. Terminal objectives usually define larger and more meaningful units of performance; enabling objectives usually define the behaviors necessary to achieve the terminal behaviors. It is these enabling objectives that usually identify the specific skills and knowledge that must be acquired.

When writing behavioral objectives, the curriculum developer should include the following three components:

1) the kind of behavior that will be accepted as evidence that the learner has achieved the objective;

Figure I

A Model For Curriculum Development Activities*


Profession
I. Role Delineation
Use for Developing Certification Exam
Program
II. Define Terminal Objectives For A Program
III. Identify Approach of Curriculum Activities (Systems vs. Course)
IV. Define Enabling Objectives
V. Identify "Type" of Objective and Order for Teaching
VI. A. Identify Teaching Strategies
VI. B. Identify Learning Opportunities
VI. C. Identify Methods for Appraising Students
VII. Design Instructional Units

*Adapted from H.L. Ammerman and W.H. Melching, "Instructional Objectives," in *The Derivation, Analysis, and Classification of Instructional Objectives.* HumRRO Technical Report 66-74 (Alexandria, VA. Human Resources Research Office, The George Washington University, 1966), pp. 11-19.

2) the conditions under which the behavior is expected to occur; and

3) a description of how well the learner must perform for his/her behavior to be acceptable.

An example of an objective which contains all three of these components is:

"Given a simulated patient, the student will obtain and report the patient's blood pressure within $\pm$ 10 millimeters of mercury."

The kind of behavior that is acceptable is evidence that the student has obtained and reported a patient's blood pressure. The conditions under which the behavior is expected to occur is with a simulated patient. The criterion is the blood pressure reading being accurate within $\pm$ 10 millimeters of mercury.

The reason these three conditions or components of learning must be specified is to decrease the possibility that any objective is open to multiple interpretations. These conditions involve translating the verbs that are open to inference into action verbs that entail direct observation and, when appropriate, specify the criteria to be used in interpreting the results. The overt behavior or process for observing it are also described so that all who read the objective will agree whether or not a given student's performance demonstrates the presence of the objectives.

Even after a curriculum developer specifies all three of these components for every enabling objective, instruction will only be effective if the behavior to be acquired for each objective is matched with an appropriate teaching strategy. For the objective stated above, it would be inappropriate to have the student read about

how to take a blood pressure and never have the opportunity to practice taking it. The objective specifies that the student is to obtain a reading from a simulated patient rather than describe how to measure blood pressure.

In order to help match appropriate teaching strategies and learning opportunities with specific objectives, educators have begun to distinguish between several different types of learning.

> Benjamin S. Bloom, and David K. Krathwohl have proposed extensive systems for classifying objectives. To some extent these systems represent the type of a classification scheme suggested. However, it should be noted that the categories used in these systems were derived from a logical base rather than from an instructional base. It is unlikely at the present time that a unique instructional strategy can be identified for each category in the Bloom-Krathwohl system. A system which is more appropriate from an instructional design standpoint is the system proposed by Robert M. Gagné. Gagné attempts to identify for each kind of learning in his system unique conditions which are necessary for the type of learning identified to occur. An elaboration of the Gagné system which more clearly specifies the instructional variables involved, especially for the higher types of learning outcomes (concepts, principles, and problem solving), will likely be more valuable for instructional design. (Merrill, 1971, p. 61.)

Gagné (1965), in an attempt to facilitate this kind of matching, separated learning outcomes into five categories: intellectual skills, cognitive strategies, verbal information, motor skills, and attitudes.

> Intellectual Skills -- Intellectual skills are the capabilities that make the human individual competent (Gagné, 1970). They enable him to respond to conceptualizations of his environment. They make up the most basic, and at the same time the most pervasive, structure of formal education. They range from elementary language skills like composing a sentence to the advanced technical skills of science,

engineering, and other disciplines. Examples of intellectual skills of the latter sort are finding the stresses in a bridge, or predicting the effects of a currency devaluation. Their learning begins in the early grades with the three R's, and progresses to whatever level is compatible with the individual's interests, or as may be limited by his intellectual capacity.

Cognitive Strategies -- These are a special kind of skill, and a very important kind. They are the capabilities that govern the individual's own learning, remembering, and thinking behavior. For example, they control his behavior when he is attending in the process of reading with the intent to learn; and the internal ways he uses to "get to the heart of a problem." The phrase "cognitive strategy" is usually attributed to Bruner (Bruner, Goodnow, & Austin, 1956); Rothkopf (1968) has named them "mathemagenic behaviors"; Skinner (1968) "self-management behaviors." One expects that such skills will improve over a relatively long period of time as the individual engages in more and more studying, learning, and thinking. It has long been a goal of education to develop in students capabilities of creative problem solving. If this is indeed a learnable and generalizable trait, or possibly a collection of traits, it deserves to be included with many simpler learning skills under the heading of cognitive strategy.

Verbal Information -- All of us have learned a great deal of verbal information, or verbal knowledge. We have readily available in our memories many commonly used items of information such as the names of months, days of the week, letters, numerals, towns, cities, states, countries, and so on. We also have a great store of more highly organized information, such as many events of American history, the forms of government, the major achievements of science and technology, the components of the economy. The verbal information we learn in school is in part "for the course only," and in part the kind of knowledge we are expected to be able to recall readily as adults.

Motor Skills -- Another kind of capability we expect human beings to learn is a motor skill (Fitts & Posner, 1967). The individual learns to skate, to ride a bicycle, to steer an automobile, to use a can opener, to jump rope. There are also motor skills to be learned as part of formal school instruction, like printing letters, drawing a straight line, aligining a pointer on a dial face. Despite the fact that school instruction is so largely concerned with intellectual functions, we do not expect a well-educated adult to be lacking in certain motor skills, some of which (like writing) he may use every day.

Attitudes -- Passing now to what is often called the "affective domain" (Krathwohl, et al., 1964), we can identify a class of learned capabilities called attitudes. All of us possess attitudes of many sorts towards different things, persona, and situations. The effect of an attitude is to amplify an individual's positive or negative reactions toward some person, or thing, or situation. The strength of a person's attitude toward some item may be indicated by the frequency with which he chooses that item in a variety of circumstances. Thus, an individual with a strong attitude toward helping other people will offer his help in many situations; whereas a person with a weaker attitude of this sort will tend to restrict his offers of help to fewer situations. The schools are often expected to establish socially approved attitudes such as respect for other people, cooperativeness, personal responsibility, as well as positive attitudes toward knowledge and learning, and an attitude of self-esteem. (Gagné & Briggs, 1974, pp. 23-25.)

For the purposes of this document, the following adaptations have been made:

1) Verbal information will be identified as knowledge. Knowledge involves lower level cognitive skills such as recall.

2) Intellectual skills will be identified as mental skills. Mental skills involve the higher level of cognitive skills such as analysis, integration, synthesis, and problem solving.

3) Motor skills will be identified as psycho-motor skills.

4) Attitudes will be subsumed by the category attributes. Attributes will include attitudes, values, and beliefs.

5) A new category, interpersonal skills, has been established to define the set of techniques which facilitate the provision of health care by supporting positive relations between people.

It should be understood that objectives required to achieve the physician assistant's role often combine the above learning categories. Yet in terms of curriculum development, it is often easier to further categorize them into discreet knowledge, mental, psycho-motor, interpersonal skills, and attributes. It would

then follow that basic learning units or courses sometimes are purely knowledge based, such as those in Anatomy and Physiology; while others, such as patient interviewing, require both knowledge of the concepts of interpersonal skills and understanding of body structure and function in health and disease.

E. Two Samples of Behavioral Objectives

In order to explain how the Role Delineation can be used to develop curriculum, samples of objectives for two areas of training a physician assistant have been provided. Both examples provide objectives from most of the major and specific responsibilities from the Role Delineation. Each objective is identified by type (knowledge, mental, psycho-motor, interpersonal, or attribute) or types as appropriate.

In using these examples, it should be remembered that they represent only a sampling of objectives for illustrative purposes.

In order to help the reader identify the specific types of objectives, the following code and definitions are provided:

CODE	TYPE	DEFINITION
K	Knowledge	Lower level cognitive skills emphasizing recall and memorization. Referencing skills also are included in this category.
MS	Mental Skills	Higher level cognitive skills emphasizing analysis, integration, synthesis, and problem solving.
IS	Interpersonal Skills	That set of techniques (e.g., patient education, interview techniques, counselling, professional expectations) which facilitate the provision of health care by supporting positive relations between people.
PS	Psycho-motor Skills	Those skills which require either gross body movements or finely coordinated body movements.
A	Attributes	Attitudes, values, and beliefs; includes sensitivity and empathy to cultural, educational, economic, and community variables.

Sample of Objectives for Clinical Medicine

I. Establish a Health Status Data Base: Eye

(K) A. The physician assistant student will be able to identify the following structures or landmarks on a diagram or anatomical model of the eye:

1. Lids
2. Superior and inferior lacrimal puncta
3. Lacrimal caruncle
4. Lacrimal gland
5. Nasolacrimal duct
6. Conjunctiva
7. Sclera
8. Cornea
9. Anterior chamber

10. Iris
11. Suspensary ligaments of lens
12. Cilliary body
13. Canal of Schlemm
14. Lens
15. Posterior chamber/vitreous body
16. Optic disc and nerve
17. Arteries and venules
18. Retina and macula

(K) B. The physician assistant student will draw a general picture of what is seen on fundoscopy to include:

1. Optic disc
2. Retina
3. General distribution of vessels
4. Macula

(K,MS) C. The physician assistant student should be able, through diagram and narrative, explain the mechanisms of human vision to include:

(K) 1. The role of the lens and cilliary body in focusing
(K) 2. The role of the rods and cones in color vision
(K) 3. The role of the optic pathways and occipital lobe of the brain

(K,MS) D. The physician assistant student will be able to describe and identify, using visual aids, the etiologic factors involved, the signs and symptoms, and course of selected problems affecting the eye to include:

1. Conjunctivitis
2. Blepharitis
3. Panophthalmitis
4. Corneal ulceration
5. Foreign body
6. Hypopyon/hyphema
7. Lenticular opacities (cataracts)
8. Vitreous hemorrhage
9. Retinal vascular occlusion (artery and vein)
10. Glaucoma
11. Hypertension
12. Diabetes mellitus
13. Hyperthyroidism
14. Papilledema
15. Retinal detachment

16. Stye
17. Xanthelasma
18. Pterygium
19. Coloboma

(MS,IS) E. The physician assistant student will demonstrate the ability to elicit an appropriate historical data base to include:

(MS,IS) 1. Familial history of eye problems, allergies, or chronic disease
(MS,IS) 2. Previous patient history of allergy, altered visual acuity, glasses, medications, or chronic disease
(MS,IS) 3. Systemic review of symptoms related to the eye
(MS,IS) 4. History of present illness for specific complaint to include adjustment for age specific problems

(PS,K) F. The physician assistant student will be able to perform a physical examination of the eye evaluating the following:

1. Visual acuity and color vision
2. Lids, conjunctiva, and sclera
3. Extraocular movements
4. Peripheral visual fields
5. Pupillary response to light and accomodation
6. Cornea, chambers, lens, and retina
7. Intraocular pressure

(PS,K) G. The physician assistant student will demonstrate proficiency in using the following instruments of examination:

1. Snellen chart (standard and illiterate E)
2. Chromatograph cards (color blindness)
3. Pen light
4. Ophthalmoscope
5. Tonometer
6. Florescein staining

(MS,IS) H. The physician assistant student will demonstrate the following interpersonal skills while taking the history and performing the physical examination:

1. Establish and maintain a rapport with the patient
2. Increase appropriate statements through reinforcement
3. Maintain the accuracy of interpretations by recounting findings for verification or revision
4. Respect the confidentiality of patient information

5. Defer answers to questions when appropriate
6. Effectively explain and perform a physical examination
7. Say "I don't know"

II. Analyze Data Base

(K,MS) A. Given the subjective and objective data obtained from the medical history and physical examination, the physician assistant student will analyze the information in terms of the following conditions effecting the eye:

1. Conjunctivitis
2. Decreased visual acuity
3. Panophthalmitis
4. Corneal ulceration
5. Trauma/foreign bodies
6. Lenticular opacities
7. Retinal vascular occlusions (artery and vein)
8. Glaucoma
9. Hypertension
10. Diabetes mellitus
11. Hyperthyroidism
12. Arteriosclerosis
13. Nystagmus/ocular palsy
14. Amblyopia/strabismus
15. Herpes simplex

III. Develop/Formulate Health Management Plan

(MS, IS) A. The physician assistant student will formulate and implement a plan of treatment for each of the problems identified in the data base.

(MS, IS) B. The physician assistant will formulate a plan for the appropriate referral/ consultation for those problems outside his/her level of competency.

(MS,PS) C. The physician assistant student will initiate emergency measures and refer patients with the following eye problems:

1. Trauma/embedded foreign body
2. Acute glaucoma
3. Hypopyon/hyphema
4. Retinal artery occlusion

5. Retinal detachment

(MS, PS, IS) D. The physician assistant student will be able to monitor diagnosed abnormal opthalmoscopic findings and refer at appropriate intervals patients with:

1. Hypertensive retinopathy
2. Diabetic retinopathy
3. Glaucoma
4. Cataracts

E. The physician assistant student will be able to educate/counsel patients concerning:

1. Self-care of eye problems
2. Routine visual screening
3. Community resources for support of specialized care
4. Contact lenses and their problems
5. Eye hazards
6. Need for corrective lenses

IV. Refer Patients as Necessary

(K, A) A. The physician assistant student will specify in writing those conditions of the eye requiring physician consultation/referral.

V. Prepare and Carry Out Strategies to Promote Acceptance of the Role Within the Professional/Patient Community

(A, IS) A. The physician assistant student is able to discuss his/her role in the prevention, diagnosis, and treatment of eye problems in regard to the following individuals:

1. The employer (physician and/or health facility administrator)
2. The patient
3. Consulting physicians
4. Allied health professionals
5. The general public

VI. Maintain Competency Through Continuing Education

A. The physician assistant student will demonstrate the application of skills for continued learning by the:

(A,MS) 1. Reading of appropriate journal articles
(A,MS) 2. Attending appropriate conferences
(A,MS) 3. Discussing current management concepts

Sample of Objectives for Laboratory Skills

Goal: The physician assistant student will be able to order, perform, and interpret the results of a glucose tolerance test (GTT) in the workup of a patient when indicated.

I. Establish a Health Status Data Base

(K) A. The physician assistant student will be able to list at least three appropriate sites for venipuncture, which may include:

1. Basilic veins
2. Cephalic veins
3. Median cubital veins
4. Median antribracheal veins
5. Accessory cephalic veins

(K,PS) B. The physician assistant student is able to assemble the appropriate equipment for venipuncture adherring to principles of sterile technique.

C. The physician assistant student is able to demonstrate the appropriate patient preparation, to include:

(IS,K) 1. Explanation of procedure
(K,PS) 2. Positioning of patient
(K,PS) 3. Cleansing site for puncture

(MS,PS) D. The physician assistant will demonstrate correct operational technique for venipuncture taking the following variables into consideration:

1. Age of the patient
2. Type of equipment

3. Site accessibility
4. Other medical conditions

(K,PS) E. The physician assistant student will demonstrate proper specimen preparation for laboratory analysis.

II. Analyze Data Base

(K) A. Given a set of test results, the physician assistant student will be able to classify these as normal or abnormal by use of appropriate references.

(MS) B. The physician assistant student will be able to correlate the results of the GTT with the original indications (history, physical findings) for performing the test.

III. Develop and Implement Health Management Plan

(MS) A. The physician assistant student will consult with the physician in all other instances of an abnormal GTT.

(MS) B. The physician assistant student demonstrates recognition of the sensitivity and specificity of the GTT and uses results in association with other findings.

(A,K) C. The physician assistant student is able to orally identify how his/her treatment plan is limited by the following factors:

1. Social and cultural environment
2. Community setting and resources
3. Economic resources

(MS) D. The physician assistant student will be able to outline a management plan in consultation with the physician for the following two conditions:

1. Diabetes mellitus
2. Hypoglycemia

(MS) E. The physicion assistant student will demonstrate knowledge of appropriate follow-up care for those patients including appropriate referral points to physician.

IV. Prepare and Carry Out Strategies to Promote Acceptance of the Role Within the Professional/Patient Community

(A,IS) A. The physician assistant student is able to verbalize his/her role in the performance and interpretation of the GTT in regard to the following individuals:

1. The employer (physician and/or health facility administrator)
2. The patient
3. Consulting physicians
4. Allied health professionals
5. The general public

V. Maintain Competency Through Continuing Education

(A,MS) A. Reads appropriate journal articles.

(A,MS) B. Attends appropriate conferences.

(A,MS) C. Is able to discuss and use current accepted diagnostic methods.

(A,MS) D. Is able to discuss and use current accepted treatment/management methods.

(A,MS) E. Works with physician to improve knowledge and skills (employing physician and/or eye specialists).

(A,MS) F. Contributes to journals and/or continuing education conferences.

F. Teaching Strategies, Learning Opportunities, and Methods for Appraising Student Performance

The emphasis on learning must be placed on what behaviors the physician assistant will be expected to perform as a graduate. In this respect this guide attempts to identify entry level behaviors and then move back through the educational process to generalize methods for effectively teaching and evaluating these behaviors.

Teaching strategies, learning opportunities, and methods for appraising student performance will be presented in two ways. First, there will be a discussion of the types of teaching strategies, learning opportunities, and methods for appraising student performance including their relationship to each other. Second, there will be some specific illustrations of the use of each.

Teaching Strategies

The term "teaching strategies" is used to refer to any set of activities whose purpose is to present information to the learner in order to change his/her behavior. Unfortunately, no strategy insures that the learner will acquire the desired behavior; the only way to be assured that learning has taken place is through either formative or summative evaluation (testing). (For further information, see "Methods of appraising Student Performance" below.)

The following list of teaching strategies should not be considered complete. Its purpose is to describe some commonly used strategies.

A. Lecture -- The emphasis is on instructor presentation of material with little provision for student interaction. Student participation is passive except for the purpose of clarifying the material presented by asking questions.

B. Self-Instruction -- This may be considered as both a learning and teaching strategy. In this context, the individual student interacts with learning materials. This may or may not require specific input from an instructor. Many materials are designed to provide for student self-evaluation activities.

C. Discussion -- This strategy allows for student interaction with an instructor with input from both. It is differentiated from lecture by the level of student questioning and the degree of interaction among teachers and learners.

Large and small group discussion differ in the following respects:

1) amount of learner control;
2) amount of interaction;
3) type of interaction;
4) amount of feedback;
5) type of feedback;
6) group personality factors; and
7) production emphasis.

D. Demonstration-Observation -- This is teaching by manipulation of people or materials for the purpose of conveying knowledge or techniques for later student use. This strategy is most often used in the clinical setting with student learning in both the cognitive and psychomotor domain.

E. Simulation -- This is the creation of a student problem-solving methodology which approximates a real-world situation. Simulation is an active mode of learning which includes the following:

1) Role playing
2) Gaming
3) Social drama
4) Case studies.

F. Practice-Manipulation -- This is a method for establishing proper psycho-motor coordination by means of repeated trials. Modeling behavior and trial and error are the major learning processes. The student makes improvement in skill through the process of self-assessment, increasing his/her skill according to an established criteria.

There are probably two major "schools of thought" involving the selection of teaching strategies. One school of thought advocates that education is most effective when one matches the teaching strategy to the learning style of those to be educated. The other advocates that education is most effective when one matches the teaching

strategy to the type of learning to be acquired. It is probably more realistic to select teaching strategies that are appropriate to both the learner's style and to the type of learning. Table A shows the primary relationship between the types of objectives and different teaching strategies.

Since the vast majority of physician assistant education takes place in groups, teaching strategies must be broad enough to encompass a variety of learning styles so that all can benefit. In addition, the strategies to be used must be realistic and relevant to the setting. Since we are attempting to educate a thinking practitioner, the more he or she can become actively involved in the learning process, the more effective the education. For example, in learning to interview, many approaches may be used. The student may read about interviewing techniques, study, may observe a film or practical example of an interview and may try out various styles and techniques on actual patients with observation either through a one-way mirror, video-taping, or with an observer (fellow student or instructor) in the room. In addition, students can learn by being shown good examples, poor examples, and sequella or combinations of both since many learn by mistakes as well as reinforcement of positive behaviors.

In summary, when selecting teaching strategies, one should:

a) Provide for individual differences.

b) Select strategies based upon the nature of the objectives to be accomplished.

c) Provide for a variety of learning experiences.

Objective Type	Instructional Mode							
	Lecture	Audio/ Visual	Self-Instruction	Demonstration	Discussion	Observation	Simulation	Clinical Interaction
Attributes				X		X	X	X
Interpersonal Skills				X	X	X	X	X
Knowledge	X	X	X	X				
Mental Skills	X	X	X	X	X	X		
Psychomotor Skills		X	X			X	X	
Mental and Interpersonal Skills						X	X	X
Mental and Psychomotor Skills				X		X	X	X

TABLE A
Primary Relationships Between
Objective Type and Instructional Mode

d) Be consistent with expected outcomes (evaluation).

e) Encourage student participation.

f) Consider methods of student learning;

1) Observation -- This takes place as a result of observing faculty members doing procedures or presenting cases where there is no assumption of performing the procedure by the observer or of attempting to replicate the instructor's behavior.
2) Modeling -- This takes place in the process of preforming procedures or presenting cases in essentially the same way as those performed by physicians whom the student has observed.
3) Trial and error -- This takes place in the process of problem solving and/or performing tasks and subsequently changing techniques on the basis of self-assessment of the outcome or effectiveness.
4) Instructed -- This results from engaging in activities such as performing procedures and presenting cases in the presence of an instructor, who subsequently comments on both the good and bad aspects of the student's performance.
5) Question-answer -- This takes place when the student is obliged to use his knowledge, perception, memory, and experience to respond to questions that are put to him.
6) Inquiry -- This takes place in the process of the student's asking faculty, peers, house officers, and/or staff members questions for such purposes as clarification, elaboration, and information.
7) Didactic -- This takes place as the student listens during didactic presentations, rounds, seminars, discussions, and the like.
8) Self-learning -- This takes place in the process of unsupervised discussions with patients, reading library books and periodicals, viewing audiovisual materials and charts, and using other sources that the student explores on his own initiative.
9) Practice learning -- This takes place in the form of practice exams for recall and in the process of repeating procedures until a sense of mastery is acquired.

g) Be consistent with appropriate educational settings.

Learning Opportunities

The term "learning opportunities" is used to refer to any setting where learning can take place in a pre-planned situation. Obviously, learning can and should take place at any time and in any place. The learning opportunities discussed below consider some of the places where formal instruction can be pre-planned. It is not efficient curriculum development to hope that instructional activities will just "happen"; instead they must be planned *a priori* in order to increase the probability that learning will take place more effectively and efficiently.

Obviously, any list of instructional settings will be incomplete, since individual training programs will vary widely in the resources available to them. As such, it is the responsibility of each program to decide what sites are available for their students and develop their curricula accordingly.

The following list describes some commonly available sites and should not be considered complete:

A. Classroom -- A classroom, because it provides a specific place for the speaker and moveable seating arrangements for the learner, is usually the preferred location for presenting lectures and having group discussions.

B. Laboratory -- The term "laboratory" is used to describe any setting where the student is expected to interact on an individual basis with equipment, instruments, etc. The emphasis in these settings is usually on the student's acquisition of psychomotor skills and their integration with knowledge. The laboratory setting may be used for several different types of learning modes, including self-instructional materials, demonstration with immediate student practice, and observation with

and without practice.

C. Library and Media Center -- The library has been included as an instructional site for two major reasons. First, because the nature of physician assistant training involves the acquisition of a great deal of knowledge, the best method of teaching often involves assigning specific reading to the student. Second, physician assistants, as all professionals, must acquire the skills of a "life-long" learner. One of these skills involves using the recources available in a library. A good method for increasing the probability that a graduate will use the library in later years, is to require its use during formal training.

   A media center has been included as an instructional site because of the necessity and utility of using films, slides, and tapes in educating physician assistants.

D. Clinical Practice -- Clinical practice is an important instructional setting since physician assistant's training must involve the actual application of acquired mental skills. The clinical setting may be used for several different types of instructional modes, including group discussion, observation, and clinical interaction. The use of a clinical setting is essential when the desired behavior to be learned involves either interacting with patients or observing "real" patients. The clinical site offers the important opportunity for the student to integrate and practice all the skills he/she has acquired during training.

E. Other -- There are many other sites which can be used during the didactic phase of training physician assistants. Some "other" settings may include observation rooms, rooms equipped with video-taping equipment, patients' homes, and community agencies.

When selecting instructional sites, there are many things individual programs should consider. These include:

a) providing for individual differences;

b) reflecting on the selected instructional mode;

c) providing for a variety of settings;

d) being consistent with expected outcomes (evaluation); and

e) considering methods of student learning.

Table B depicts the primary relationship between learning opportunities (instructional setting) and teaching strategies (instructional mode). It is important to remember that this information is to be used as a guide.

Methods for Appraising Student Performance

While the purpose of teaching strategies is to present information to the learner in order to change his/her behavior, it is important to assess how well the student has acquired the new information. The three major purposes for assessing student performance are:

1) to provide feedback to the learner about his/her success in attaining the required information in order to identify needed improvements;

2) to elicit information about the strengths and weaknesses of the curriculum in order to identify areas which need to be improved; and

3) to acquire information in order to make final judgements about the competency of the learner.

It is only since the sixties with the development of two new concepts that the scope of evaluation activities has been expanded to include these three purposes.

Prior to the sixties, activities involving student learning centered around either assigning a numerical score to each student's performance or using such scores

Instructional Mode	Instructional Setting				
	Classroom	Laboratory	Library/ Media Center	Clinical	Other
Lecture	X				X
Audio/Visual	X		X		X
Self-Instruction		X	X		X
Demonstration	X	X		X	
Discussion: Small Group				X	X
Discussion: Large Group	X				
Observation/ Practice		X		X	
Observation/ Non-Practice	X	X		X	
Simulation	X				X
Clinical Interaction				X	

TABLE B
Primary Relationships Between Instructional Mode and Instructional Setting

to measure how successful a particular curriculum was in achieving its objectives. The major problem surrounding these types of "evaluation" activities involved the reluctance of curriculum developers to modify the finished product. Over time it became more apparent that there were benefits to be derived from evaluation activities that took place before the product was completed. In 1967, Michael Scriven coined the terms "formative evaluation" and "summative evaluation" to distinguish between these activities.

> Any curriculum developer is almost automatically engaged in formative evaluation, except in a very strict interpretation of "evaluation." He is presumably doing what he is doing because he judged that the material being presented in the existing curriculum is unsatisfactory, a preliminary summative evaluation. As he proceeds to construct the new material, he is constantly evaluating his own material as better than that which is already current. Unless entirely ignorant of one's shortcomings as a judge of one's own work, he is also presumably engaged in field-testing the work while it is being developed, and in so doing he gets feedback on the basis of which he again produces revisions; this is of course formative evaluation. If the field-testing is elaborate, it may amount to summative evaluation of the early forms of the new curriculum. He is usually involved with colleagues, e.g., the classroom teacher or peers, who comment on the material as they see it -- again, this is evaluation, and it produces changes which are allegedly for the better. (Scriven, 1967, p. 64.)

The concepts of formative and summative evaluation have helped to encourage curriculum writers to develop methods for eliciting and using information about the weaknesses in their programs in order to improve it (formative) before the finished product is judged (summative).

We have chosen the term "summative evaluation" to indicate the type of evaluation used at the end of a term, course, or program for purposes of grading, certification, evaluation of progress, or research on the effectiveness of a curriculum, course of study, or educational plan...Perhaps the essential characteristic of summative evaluation is that a judgment is made about the student, teacher, or curriculum with regard to the effectiveness of learning or instruction, after the learning or instruction has taken place. It is this act of judgment which produces so much anxiety and defensiveness in students, teachers, and curriculum makers. We do not believe it is possible to escape from the use of summative evaluation, nor would we wish to do so. However, there is another type of evaluation which all who are involved -- student, teacher, curriculum maker -- would welcome because they find it so useful in helping them improve what they wish to do.

In searching around for a term to describe this other type of evaluation, we found "formative evaluation" first used by Scriven (1967) in connection with curriculum improvement. Scriven points out that once a curriculum has been put in final form, everyone connected with it resists evidence which would make for major alterations. It is his view that formative evaluation involves the collection of appropriate evidence during the construction and trying out of a new curriculum in such a way that revisions of the curriculum can be based on this evidence.

We regard formative evaluation as useful not only for curriculum construction but also for instruction and student learning. Formative evaluation is for us the use of systematic evaluation in the process of curriculum construction, teaching, and learning for the purpose of improving any of these three processes. Since formative evaluation takes place during the formation stage, every effort should be made to use it to improve the process. This means that in formative evaluation one must strive to develop the kinds of evidence that will be most useful in the process, seek the most useful method of reporting the evidence, and search for ways of reducing the negative effect associated with evaluation -- perhaps by reducing the judgemental aspects of evaluation or, at the least, by having the users of the formative evaluation (teachers, students, curriculum makers) make the judgments. The hope is that the users of the formative evaluation will find ways of relating the results of the evaluation to the learning and instructional goals they regard as important and worthwhile. (Bloom, Hastings & Madaus, 1971, pp. 117-118.)

Programs should therefore not only define evaluation activities to include appraising the student's learning but to reevaluate the program's curricula in order to make improvements.

It soon became apparent to evaluators that the accuracy of their evaluation activities was dependent upon the tools they used to assess student performance. During this time period, another new concept called Criterion-Referenced Testing was developed.

The emphasis on criterion-referenced testing is to measure each established criteria. This differs from norm-referenced testing in that norm-referenced tests compare each individual's performance against other learner's performance. This does not assure that a student who "passes" a norm-referenced test possesses the acceptable skills. In criterion-referenced testing, all students who "pass" have demonstrated their possession of the desirable skills. For curriculum developers, criterion-referenced tests help evaluate the curriculum as well as identify the specific areas in which students need further work.

Criterion-referenced testing has been extensively used in individualized systems of instruction and proficiency examinations.

The following list of methods for appraising student learning should not be considered complete. Its purpose is to describe some commonly used methods for appraising student learning.

There are four major techniques for appraising student learning: written (or oral) responses to specific questions by the student, observation of the student, demonstration of specific technical skills using models, and medical chart audits.

A. Written Tests -- This is the presentation of previously derived questions to the student which requires a written (or oral) response by the learner. There are several types of written tests.

1) Objective Tests -- Any test which can be provided with a simple pre-determined list of correct answers is considered to be objective. True-false, multiple choice, or matching exercises are completely objective. Short-answer or completion items are only partly objective since the student's answers must be compared to the acceptable answer, and exact wording between the two is unlikely.

   Objective tests are usually used to assess knowledge of information (e.g., memorization, recall). In recent years more sophisticated item formats have been designed which have increased the difficulty level of the items. These include such formats as:

   a) correct the "false" statements so they are true; and
   b) select all the options which are appropriate.

2) Subjective Tests -- Any test where the score is determined by the personal opinion and judgement of the scorer is considered to be a subjective test. Questions requiring lengthy written (or oral) answers by the learner are usually subjective test items because a pre-determined scoring key is not developed. Expert opinion is often used to evaluate the student's answers.

3) Patient Management Problems (PMP) -- PMPs allow the student to be evaluated in terms of the application of knowledge, judgement, and decision-making. The use of PMPs as a method for appraising student performance is a powerful tool; it permits the evaluation of higher cognitive skills requiring decision-making in an objective format.

B. Observation -- This usually involves observing the student according to some pre-determined set of behaviors. There are several types of observation forms.

1) Checklist -- Checklists usually consist of a list of items to be asked by the student such as in eliciting a history, or a list of activities to be performed by the student such as in performing a physical examination. The observer's task is to check all the items the student is observed doing.

2) Rating Scales -- Rating scales differ from checklists in that the observer does not merely note the presence or absence of some specific behaviors but instead provides some description of the adequacy of the tasks being performed. For example, the student performed a task very well, acceptably, barely acceptably, or unacceptably. Rating scales have some advantages and disadvantages when compared to checklists. While checklists are more objective since they do not require the observer to rate quality of performance, rating scales can provide better formative evaluation to both the curriculum developer and the student because of this subjective component.

3) Critical Incident -- Critical incident is the description of some occurrence involving a person which is taken to indicate unusual competency or lack of competency on his/her part. Although the use of critical incidences also involves personal judgement on the part of the observer, it strengthens the use of observational techniques because it permits the evaluation of student behaviors not previously described on the observation form.

C. Demonstration of Technical Skills -- This is the observation and evaluation of the student in performing certain specific technical skills. This would include demonstration of certain laboratory skills in order to evaluate method or technique, as well as other psycho-motor skills that can be demonstrated on a model.

D. Medical (Chart) Audits -- Medical chart audits can be used to appraise the student's performance on recording the appropriate data base.

The instruments identified in this document are only examples and do not reflect the total range of techniques available. The accuracy of evaluation is dependent upon the tools used to assess student performance. Program staff should be made aware of the need to not only carefully review and test, but to match the type of evaluation tool chosen to the type of learning required and to the type of evaluation information desired. The more criterion-referenced information one acquires, the more useful the information will be to both the program developers and the students.

Table C represents some of the relationships between methods used to appraise student performance and types of objectives one can teach. The table helps illustrate how critical this relationship is in providing appropriate measures for making decisions about student proficiency.

As previously discussed, there are several roles evaluation can play. No matter which roles one choses, evaluation should:

1) Be accurate.

2) Be based on clearly stated criteria.

3) Act as a guideline for student achievement.

4) Be realistic (if student proficiency in the physical examination is not expected until graduation then the evaluation criteria should so reflect).

5) Provide information for program improvement.

Objective Type	Evaluation Methods			
	Written Tests	Observation	Demonstration of Technical Skills	Medical (Chart) Audits
Attributes		X		
Interpersonal Skills		X		
Knowledge	X			X
Mental Skills	X			X
Psychomotor Skills			X	
Mental and Interpersonal Skills		X		
Mental and Psychomotor Skills		X	X	

TABLE C
Primary Relationships Between
Objective Type and Evaluation Methods

APPENDIX A

Primary Health Care -- A Descriptive Definition

From "A Descriptive Definition of the Scope of Content of Primary Care," by H. K. Silver and P. R. McAtee. Pediatrics, 56:957-959, 1975.

Primary Health Care -- A Descriptive Definition*

Primary health care includes the initial contact of the patient with the health care system and encompasses a full range of basic health services. Primary health care should be readily accessible, patient-oriented, of high quality, comprehensive, individualized, and based on a firm foundation which integrates knowledge of the medical, biological, physical, social, psychological, and behavioral sciences.

Primary health care may be provided by a variety of health professionals, working either singly or in teams. It should be given in a caring and supportive manner. Regardless of who renders the primary care, where it is provided, or how long the individual remains as a patient, the primary care provider should assume responsibility for the coordination, integration, and continuing management of the patient's total health care and services.

The basic elements of primary health care include:

- Care of those who are in good health as well as those who are ill.
- Assessment, diagnosis, and therapy of a wide variety of illnesses and injuries including the screening, initial care, management and triage of surgical and medical emergencies.
- Prevention, recognition, and management of the complications of common illnesses, including common emotional adjustment problems.
- Responsibility for recognizing and evaluating patients' total health care needs, particularly problems that are serious and correctable.
- Provision of psychological and emotional support to help people deal with psychosocial problems, psychosomatic responses, stress, and anxiety, and to help them attain the fullest level of emotional and physical well-being.
- Promotion of health through family planning, sex education, and nutritional counseling, as well as genetic and other forms of counseling and health education.
- Continuing care and management of the chronically ill, the disabled, and those requiring rehabilitation.
- Prevention of infectious disease, trauma, disorders secondary to environmental hazards, and other preventable conditions.
- Provision of appropriate cancer screening.

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* H. K. Silver and P. R. McAtee. "A Descriptive Definition of the Scope and Content of Primary Health Care," Pediatrics, 56:957-959, 1975.

- Identification of individuals at special risk from various congenital and acquired disorders.
- Consideration of the social, cultural, developmental, physiological, and environmental determinants of personality, behavior, and disease.
- Provision of health advice and services to promote health maintenance at an optimal level and to increase patients' capabilities to assume responsibility for their own care.
- Referral of the patient, when necessary, to appropriate resources, specialists, and others, and guidance of the patient through various levels of health care.

Primary health care deliverers should reach out to individuals from a variety of social, economic, ethnic, racial and environmental backgrounds who have different expectations of health care; who may not recognize the existence of health problems; who may fail to participate actively in the health care system; and who may not ordinarily seek care through established channels.

Primary health care deliverers should assist individuals to understand the need for and the process of seeking care and the services that are available. They should show individuals who are not in the system how they may enter it; help define for them the conditions under which entry could be acceptable and of value; and provide the services necessary to ensure utilization.

Primary care providers should participate in assessing community health needs, and, when indicated, in the surveillance of health problems. They should be involved in planning, organizing, administering, and monitoring pertinent health services for the community.

A SELF-INSTRUCTIONAL/TUTORIAL PROGRAM

FOR THE PREPARATION OF PHYSICIAN'S ASSISTANTS

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Presented at the

Third Annual Conference on New Health Practitioneers

St. Louis, Missouri

April, 1975

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Introduction

The training of physician's assistants at Bowman Gray consists of three phases. The first of these might be entitled "Pre-Clinical Training and Introduction to Clinical Practice". During this nine months period, which just happens to coincide with the normal human gestation period, the new trainees learn a great deal about the basic medical sciences and the information these sciences provide for solving clinical problems. Most of the training in the basic sciences consists of classroom work as opposed to training in a clinical setting. Simultaneously, however, the trainees are receiving an initiation into clinical practice in which they meet patients, learn to discuss patient problems, and begin to learn to gather data from patients. It is the didactic or classroom training in basic sciences during these nine months which will be considered in this paper.

When the program took its first class of trainees in September, 1969, the curriculum content had been determined by reviewing the results of a task analysis of the functions which it was expected the graduate physician's assistant would be carrying out. The classroom courses in the biosciences were then, and still are, taught specifically for the class of P.A. trainees.

The faculty were employees of the program and generally did not participate in the teaching of medical students. The courses which were being taught during the nine months of the first phase of training, that is, the curriculum which provided the Pre-Clinical Training and Introduction to Clinical Practice during the year 1972 in which the curriculum project began, were as follows:

Anatomy and Physiology

Pathology

Biochemistry

Microbiology

Pharmacology

Clinical Applications

Clinical Laboratory procedures

Medical Terminology

Medical Records

First Aid and Emergencies

Human Growth and Development

Courses taken with the Medical students

Human Problems and Community Services

Interviewing and Counseling Techniques

The change that has been made in the curriculum as a result of the project our faculty undertook in 1972 has involved several courses. A Self-Instructional/Tutorial Curriculum has been developed and has replaced five of the basic science courses. These courses were:

Anatomy and Physiology,	I, II, III	3 quarters
Pathology,	I, II, III	3 quarters
Pharmacology,	I, II, III	3 quarters
Microbiology,	I	1 quarter
Biochemistry	I	1 quarter

In addition to replacing these 5 courses, the Self-Instructional/ Tutorial Curriculum has also brought about changes in the organization of the Clinical Applications Course. Clinical Applications, as a course during these first 9 months, is the medium through which the trainees get their introduction to clinical practice. The Self-Instructional/Tutorial Curriculum (SIT), has affected the Clinical Applications course because the creation of the SIT curriculum offered us a good opportunity to integrate student presentations in the basic sciences with clinical experiences.

Prior to the time the curriculum project was undertaken there had been some minor dissatisfaction with Phase I of the curriculum. While the overall reaction was probably one of general satisfaction on the part of individuals in the faculty and administrative staffs, certain specific problems had periodically surfaced and resurfaced without satisfactory resolution. One of these probelms concerned the coordination of subject presentations: How can the program arrange to have pathology lectures presented to augment, in topic and time, what is being taught in Anatomy and Physiology, and at the same time integrate smoothly with the content being taught in biochemistry, pharmacology and clinical applications? Or, how can the faculty avoid repetition in content between the several courses? Even if two instructors correlated their efforts they might then find themselves out of step with a third colleague. The clinical faculty might have occasionally believed that the basic science faculty in presenting content in some area of science had not emphasized the aspects which would have had the greatest value in clinical practice. How could there be any assurance that valid observations of this nature would be implemented for future curriculum improvement when it might have been the case that the basic science faculty member had delivered his lecture ad lib and without notes?

If there was any single compelling reason why the Bowman Gray Program abandoned traditional instruction, that reason was to implement a system of instruction that would be susceptible of systematic control and improvement. In an article published at that time, technology in education was defined as being "--- a way of thinking that demands modification of techniques based on results obtained."[1] At present we envision, idealistically to be sure, an educational system administered in a way such that every student contact with the curriculum will have been preplanned collaboratively by the clinical faculty who will identify the student's need for each bit of content, and by the basic science faculty who will provide content and methods of teaching the content. Additionally, we anticipate ample feedback at every stage including the periods of didactic training, clinical training and graduate practice, and modification on the basis of that feedback so that at each administration of this curriculum its effectiveness will be improved.

Perhaps the second strongest motivating force in moving away from the traditional was to find a way of unifying presentations in the various basic sciences and between the basic sciences and student introductions to clinical medicine. We wanted not only to avoid needless repetition from one course to another, as was mentioned before, but to relate the concepts and facts of one science to another as they apply to the same clinical problem.

Closely allied to this is the question of what students really need to know from the basic sciences in order to carry out clinical practice. Certainly no curriculum especially designed for physician assistants was known to exist. Clearly to meet our need for an adequate curriculum we could not borrow the entire medical school curriculum in basic sciences because of time constraints and differences in purpose. The medical school curriculum provided a broad education in medical science while the purpose of the physician's assistant program was to efficiently provide vocational training for a much more limited medical profession.

As we saw it the purpose of the didactic instruction in basic medical sciences offered in the physician's assistant program was twofold: (a) to provide the trainees with just the knowledge needed to enable them to understand the underlying rationale for the techniques used in gathering patient data for diagnosis or for delineating patient problems; and (b) to provide the additional knowledge they would need about the more common diseases so that they, as P.A.'s, would better understand the various pallative measures and therapys used by primary care physicians in treating the most common disorders. With this as the stated purpose of the basic sciences, any content in the various courses which did not contribute directly to these purposes could be viewed as superfluous and inefficient. Relating basic science curriculum content to clinical use is a function which, we believe, only a clinician can perform. We do not expect that a faculty member schooled only in basic sciences will be able to present a course in his specialty which can stand the test of clinical relevance. As the purpose became more evident, that is, the purpose of the basic science instruction, it became essential that a major curriculum revision be carried out. For the revised curriculum the clinical faculty would identify relevant content on the basis of its clinical usefulness. With these teaching goals in hand, both the clinical faculty and the basic science faculty would then work together in translating these into behavioral objectives and in creating curriculum materials and in teaching.

Development

Anyone who is planning to begin development of a curriculum using an instructional system design approach is likely to be overwhelmed by the variety of curriculum models available.

He is also likely to experience some difficulty in directly applying any one model to the needs and specific circumstances of his situation. Most of the curriculum models will, however, be more similar than different (2, 3, 4, 5). Final decisions are highly individualistic.

The Self-Instructional/Tutorial Program we are developing and implementing for the preparation of Physician's Assistants at the Bowman Gray School of Medicine is our adaptation of an instructional systems design approach which has four major components in common with other curriculum development efforts. These components are:

1. Educational goals stated as behavioral objectives.
2. Learning experiences designed in consonance with the objectives.
3. Formative and Summative evaluation built into the program.
4. Feedback--continuous input to students concerning their progress and to the developers concerning the effectiveness of the learning experiences.

This paper will describe the three major aspects of our Self-Instructional/Tutorial Program: (1) the design of the "learning packages", or minicourses, which are provided the students; (2) the developmental activities which result in production of the minicourses; and (3) the procedures used in administrating the curriculum.

Design (Figure 1)

Unit: The unit is the major category of instructional material. Units typically include blocks of content, such as: (1) Biological Control Systems; and (2) The Respiratory System. Time for learning a unit varies from one to four weeks.

Module: The module is a logical sub-division of the material contained in a Unit. Modules cover more specific aspects of the content of a unit. A Unit will typically contain from three to eight modules, each requiring from one to six days of learning time.

Minicourse: The minicourse is a single "learning package" which is completed in one day, or about four hours. A module will contain from one to six minicourses.

Each minicourse contains the following components and related-learning activities. If students perform each activity in the sequence, as presented, then we expect that they will be very successful in this program.

1. TITLE PAGE: Descriptive title of the minicourse plus a pictorial representation of the central concepts in the minicourse.
2. INTRODUCTION: A one page overview of the minicourse concepts and the rationale for learning them, presented in a (hopefully) humorous manner.
3. OBJECTIVES and HIERARCHY: A list of statements describing what students will learn how to do during the minicourse, plus a schematic relationship of the concepts and skills to be learned, ordered from simple to more complex.

Sample Cumulative Hierarchies for Total System

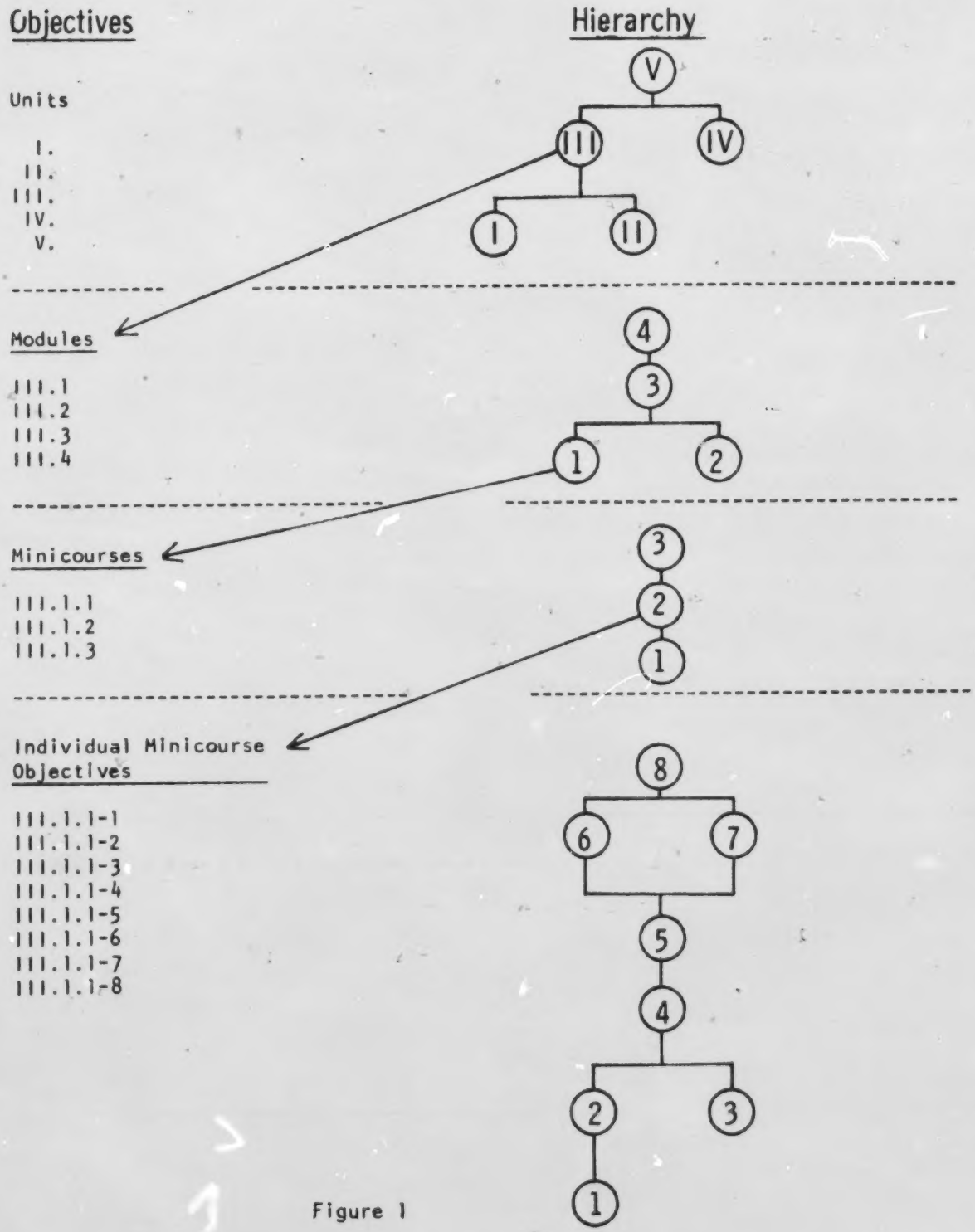

Figure 1

4. ASSIGNMENTS:

References - Primary reference which will provide students with most of the necessary information.

- Alternate references in case students either need more information or wish to dig deeper into a topic.

Handouts - Instructor prepared supplements to, or replacements for primary references. Where practicable these are programmed materials.

Activities - Demonstration and practice experiences relevant to clinical aspects of the Unit.

5. RECAPS: Review, Content, And Preparation Sheet

A series of essay questions which provide students with the opportunity to recall and integrate the concepts and principles learned in the minicourse, and to express them in their own words.

6. RECAPS TAPES: An audio-tape discussion of the RECAPS questions prepared by the instructor to reinforce the learning. Audio-tapes are available to the library as needed.

7. TUTORIAL: Small group sessions of five to ten students who meet with each other and the instructor to discuss areas of difficulty in learning.

8. SELF-EVALUATION TESTS: An objective multiple-choice examination which is keyed to the stated objectives. These are graded immediately and returned to the students so they can assess their own progress. These are not used as tests of record, that is, in computing student grades.

After all the minicourses of a unit have been completed, a multiple-choice UNIT POST TEST is administered. This test covers the objectives in all minicourses, but emphasizes the higher level of conceptual understanding.

ORGANIZATIONAL RESPONSIBILITY CHART FOR COOPERATIVE PROGRAM DEVELOPMENT

Development Activity \ Specialists	Subject Matter	Curriculum Development	Media
Content			
Selection	1	3	3
Objectives	1	1	3
Hierarchy	1	1	3
Instructional Strategies			
Selection	1	1	3
Design	2	1	2
Development	2	1	2
Media Selection	2	1	1
Media Development	3	2	1
Sequencing	1	1	3
Evaluation (Development of)			
Diagnostic	1	1	3
Formative	1	1	3
Summative	1	1	3

KEY: 1 = Primary decision-making responsibility

2 = Input required

3 = Not directly involved

Figure 2

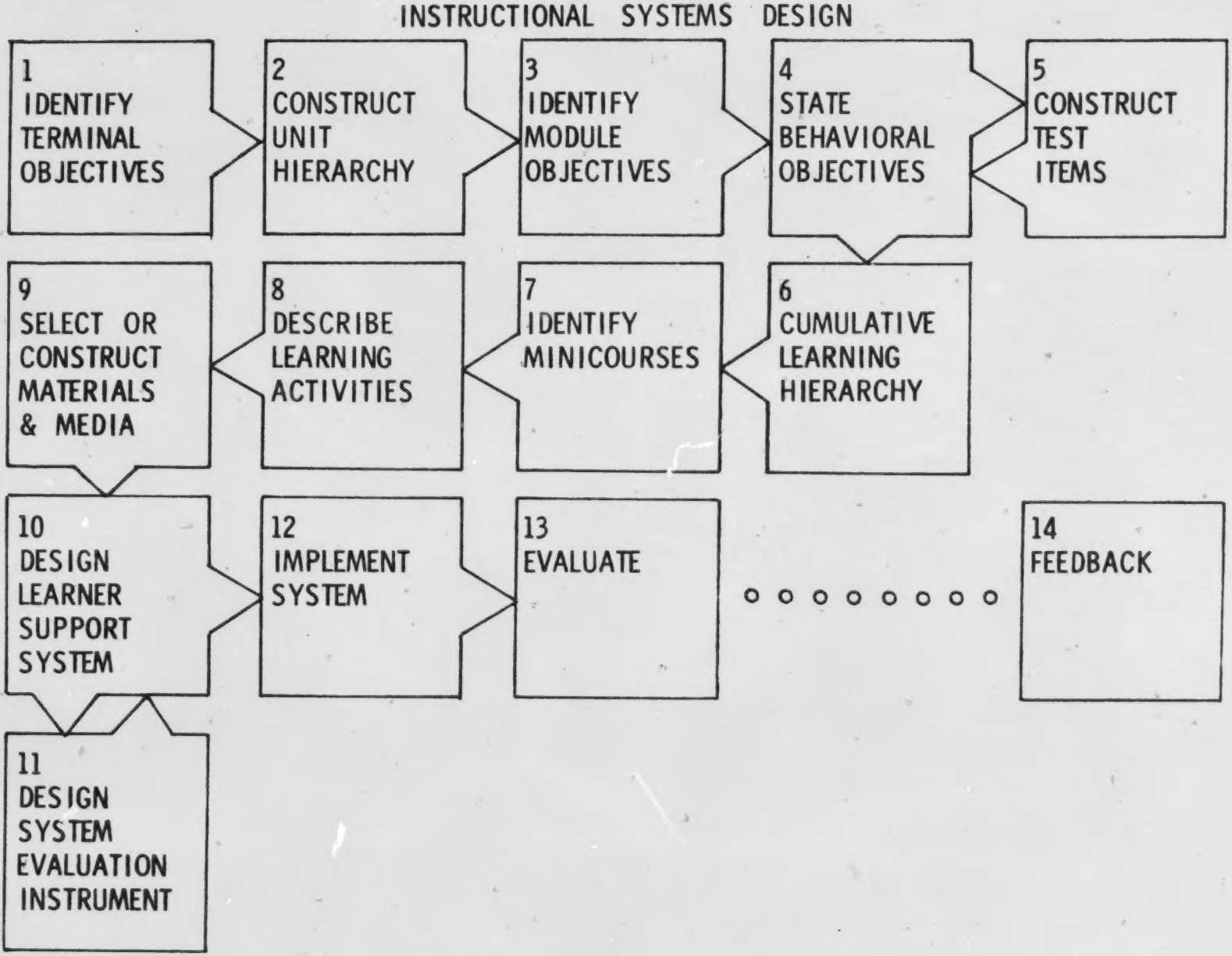
INSTRUCTIONAL SYSTEMS DESIGN
1 IDENTIFY TERMINAL OBJECTIVES
2 CONSTRUCT UNIT HIERARCHY
3 IDENTIFY MODULE OBJECTIVES
4 STATE BEHAVIORAL OBJECTIVES
5 CONSTRUCT TEST ITEMS
6 CUMULATIVE LEARNING HIERARCHY
7 IDENTIFY MINICOURSES
8 DESCRIBE LEARNING ACTIVITIES
9 SELECT OR CONSTRUCT MATERIALS & MEDIA
10 DESIGN LEARNER SUPPORT SYSTEM
11 DESIGN SYSTEM EVALUATION INSTRUMENT
12 IMPLEMENT SYSTEM
13 EVALUATE
14 FEEDBACK

Figure 3

Development (Figures 2 and 3)

The following specific faculty responsibilities as shown on Figure 2 seem to maximize the probability of completing the required minicourses.

Content

Selection - by subject matter faculty.

Objectives - subject-matter faculty identify level of specificity of learning required.

- curriculum developer's input related to criteria for stating behavioral objectives.

Hierarchy - subject-matter faculty and curriculum developers cooperatively order concepts and skills from simple to complex based on cumulative learning rationale.

Instructional Strategies

Selection - subject-matter faculty identify primary modes of instruction (i.e., reading, tapes, slides, lecturing, demonstrating, etc.)

- curriculum developer input related to learning theories involving specific learning of facts, concepts, and principles.

Design - curriculum developers identify possible learning experiences for given learning outcomes.

- subject-matter faculty maintain content - appropriate orientation and produce material.

- media specialist consults relative to practical production of original material.

Development - curriculum developer coordinates production of original material.

- subject-matter faculty produces material.

- media specialist designs and produces related media.

Media Selection - curriculum developer and media specialist cooperatively select available media on basis of a) probably effectiveness; b) production and reproduction time; c) cost effectiveness; and d) distribution and management.

- subject-matter faculty consult relative to: a) time involvement for faculty; b) management; c) personal preferences.

Media Development - media specialist designs and produces original media previously identified.

- curriculum developer maintains appropriate learning theory orientation.

Sequencing - subject-matter faculty and curriculum developer order learning assignments on a cumulative learning basis.

Evaluation

- Subject-matter faculty constructs multiple-choice test items consonant with previously identified behavioral objectives.
- curriculum developer maintains "content validity" of test items (i.e., how well they measure what they are intended to measure).

Order of Developmental Activities

Step 1: Construction of objectives, hierarchies and number and sequence of minicourses by the entire faculty. Final approval by Clinical Faculty.

Step 2: Assignments - Subject-matter faculty will prepare the assignment sections of the minicourse according to the format followed in earlier minicourses.

Step 3: Handouts - instructor prepared supplements to primary references will be written by subject-matter faculty where needed. Curriculum faculty will assist in preparing programmed material.

Step 4: Worksheets - Worksheets and worksheet solution section will be written by subject-matter faculty.

Step 5: Alternate References - Subject-matter faculty will identify alternative references in the library and specify them according to the established format.

Step 6: Media - Curriculum faculty will coordinate and assist the media specialist in the design and preparation of supportive visuals, films, tapes, etc. which are desired by subject-matter faculty.

Step 7: Packaging - Curriculum faculty will edit and prepare the above material in the final format and return to the primary authors for final editing.

Step 8: RECAPS - Subject-matter faculty will prepare RECAPS and RECAPS Tapes as appropriate.

Step 9: Evaluation - Subject-matter faculty will construct multiple-choice test items where appropriate for given objectives. There should be a minimum of 5 test items per objective as a general standard. Evaluation formats for Clinical Practices will be developed as appropriate.

Curriculum faculty will assist in constructing test items upon request by subject-matter faculty. Curriculum developers will critique evaluation measures in terms of maintaining "content-validity", or i.e., in assuring that the test used is likely to measure what it is intended to measure.

Step 10: Introduction - Curriculum faculty will write introductions to Systems Units. Clinical faculty will provide statements related to the content emphasis.

Step 11: Final Assembly - Curriculum and media faculty will put the total "package" together. It will then be returned to the subject-matter faculty for final editing.

Step 12: Duplication and storage.

Administration (Figure 4)

The Self-Instructional aspect of the program is embodied in the minicourse format described earlier. The Tutorial aspect is provided by both faculty and other students. Since there are no formal lectures in the program, each student is responsible for contacting another student or a faculty member for tutoring as the need arises.

The student-student tutoring occurs as the result of an imposed "grouping" of students in Tutorial Study Groups consisting of five members each. Although individuals may elect to study independently of the group, they are restricted in that no one is permitted to take the Self-Evaluation test until all members of the group are ready. A great deal of student-student tutoring occurs as a result of this restriction.

In addition to the informal tutoring sessions, a faculty member is available at a specified time during each minicourse to meet with interested students. A scheduled session consisting of two tutorial study groups meets for at least one hour, once per week, for the purpose of discussing relationships among several minicourses. Full group sessions are scheduled periodically by either faculty or students to discuss matters concerning the entire student body. These may be guest speakers, Unit Post Test reviews, or student-faculty discussions.

FLOW CHART OF STUDENT PROGRESS THROUGH THE SELF-INSTRUCTIONAL / TUTORIAL PROGRAM

1. Obtain minicourse from TRAY (Tutorial Reservoir Assigned You) on the library shelves.

2. Read introduction and objectives. Determine what you must accomplish.

3. Work through learning assignments one at a time, discussing them with classmates if you wish.

4. Think through RECAPS.

5. Evaluate your performance on RECAPS by listening to the RECAPS tape.

6. Decide whether to: a) restudy and/or review; b) seek help from the instructor; or c) take post test. (These are "tutorial group" choices.)

7. Obtain and take minicourse Post test.

8. Have test scored and then: a) discuss results with tutor; or b) continue to the next minicourse.

Figure 4

The Self-Instructional/Tutorial Program has several evaluation components. Formative evaluation is carried out by performing an item analysis of the self-evaluation tests for each minicourse. Each test item is keyed to the appropriate objective. When the error rate is high, the desired learning did not occur, and the appropriate faculty member is alerted on the same day so he can be prepared to clarify the situation for students immediately. The program revision process also utilizes this information to decide when the learning experiences were not adequate.

Further data is collected via a 16-item minicourse evaluation questionnaire. Analysis of this data provides direct feedback from students, on a daily basis, concerning their satisfaction with each minicourse. This also aids tremendously in the revision process since student perceptions point directly at those components of the minicourse which are least useful in their study.

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PROPOSED METHOD OF
PERSONALIZED SELF-PACED INSTRUCTION
for the
Utah MEDEX Instructional System

Prepared by
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August, 1975

The Utah MEDEX Instructional System is conceptualized to consist of three components: (1) instructional objectives which indicate the educational goals in behavioral terms, (2) the educational evaluation which measures whether the students are meeting the standards established by the objectives, and (3) the curriculum which presents the subject-matter to the students on personalized or individualized basis. Now that considerable progress has been made in the specification of the objectives and the development of the educational evaluation, the focus of the program's curriculum development has turned to the individualization of the instruction.

This document presents some background on the new teaching methods under development, and an overview of the current research literature will be presented to describe the reasons for the transition to this new approach. A major portion of this paper will be devoted to our conceptualization of personalized instruction within the Utah MEDEX Instructional System. This includes: (1) statements concerning the philosophies of educating and training Medex, (2) past and present problems in this program which will be solved by the new system and (3) a description of the curriculum materials to be employed within the new system, and (4) an outline of the personnel who might develop and operate the system.

The final portion of this paper explicates the working relationship between the teaching faculty and the educational specialists on the MEDEX staff. The product of this relationship will be instructional materials, directed toward teaching primary care skills and constructed to function within an individualized system of instruction.

Grass Roots

The particular approach to teaching selected by Utah MEDEX has its roots in a strategy originally proposed by Fred S. Keller, a psychologist attempting to solve a number of problems plaguing the Psychology Department at Arizona State University. Briefly, the problems were 1) overfilled classrooms, 2) poor student/faculty ratios, 3) minimal personal student-instructor contact, 4) moderate achievement levels and 5) low motivation to study and learn. Keller (1968) outlined the process and product which evolved from his attempt to solve these problems. What follows is a description of his solution.

Instead of having an instructor lecture to 150-200 students for one hour a day, 4 or 5 days per week, Keller eliminated the daily lecture and instructional materials were prepared as if they were to be delivered in a one hour lecture, but were compiled to form the "text" for the course. Evaluations were reduced in size and increased in number from one mid-term exam and one final exam to one quiz after each lecture-sized portion of material. These quizzes were taken whenever the student decided that he had learned a given lecture-sized section of material. A high level of mastery (90%) was required for the student to move to the next portion of material. Keller employed recent graduates of the course as proctors to administer quizzes and give feedback to students. When a student had completed a quiz, he asked a proctor to grade it for him. The proctor provided the student with his grade and, more importantly, with "coaching" or brief discussions of difficult concepts which the student failed. In addition, the proctor would provide personal encouragement to the students who were doing well and tutorial help for those who needed it. The lines of communication were: the instructor, who prepared materials and quizzes and gave "special" lectures and demonstrations, an assistant who managed and monitored the proctors, proctors, who graded quizzes and provided instructional feedback and encouragement and the students who were learning introductory psychology.

The essential components were 1) lecture-sized, small portions of instructional material; 2) quizzes for each portion of that material; 3) high mastery level required for progressive movement through the materials; and 4) proctors. These components have been researched, modified and appended during the last seven years to the point where Personalized, Self-paced Instruction (PSI) connotes much more. Examples of additions and modifications to Keller's original concept include: study questions (which then became study objectives and later became behavioral objectives), modularized instructional material (sometimes commercially produced), unit tests (similar to mid-term and/or final examinations), self-study evaluations (small set of questions similar to quizzes with which the student can assess his mastery prior to taking the quizzes), and student involvement in activities other than simply reading, studying and taking tests (e.g. actually conducting small experiments, collecting data, charting their own progress, etc.). All or any subset of these modifications may be incorporated into an educational system depending on such variables as the institution's educational philosophy, time constraints (e.g. for graduation), instructor concerns, size of the class, the nature of the material or content to be taught and the availability of commercially produced media.

Personalized, Self-paced Instruction (PSI) may be very appealing intellectually, but it is likely to result in an enormous amount of work to initially prepare the necessary materials. Is it worth the effort? Do students learn more? Better? Do they enjoy the courses more? How does learning under this approach compare with learning under the lecture-discussion-final exam approach? The answers to these and other concerns lie in the research data compiled on this instructional mode. The following studies are representative of many conducted since Keller's original work.

McMichael and Corey (1969) compared two freshmen classes each receiving a different teaching method. One class received daily lectures (4 per week) and three hourly exams (2 mid-terms and one final examination). The other class received one lecture and two quiz sessions per week (PSI). Both classes received the same curriculum content and both classes were given

the same 50 question, multiple choice, final exam. Although certain confounding factors (e.g. different instructors) may have biased the results somewhat, scores on the final exam were significantly higher for the PSI class (1 lecture and 2 quizzes per week) than for the traditional class (4 lectures per week and 3 hourly exams). Student rating forms also indicated that they favored the PSI method more than the traditional method.

Born (1971) and others (Malott and Svinicki, 1969; Sheppard and MacDermott, 1970; Johnston and Pennypacker, 1971) have evaluated the PSI system of instruction and variations of it in the college curriculum. Born (1971) compared the lecture-discussion method with the PSI method. The evaluations used in the comparison were 1) a midterm and 2) a final exam, both of which were prepared by the instructor without prior knowledge of the specific study materials which were given to the students by the graduate assistants (proctors). Again, evaluation scores reflected overall higher scores (grades) for students in the PSI method than for those in the lecture-discussion method. Grades for the self-paced groups were 79% As, 5% Bs, and 16% Cs. No Ds or failing grades were obtained. Percentages for the lecture-discussion method were 23% As, 23% Bs, 23% Cs, 23% Ds and 7% failing (Es). The mastery requirement significantly altered the distribution of grades for the PSI method as compared with the traditional method.

Although the foregoing studies were concerned with the individualized self-paced instruction in psychology (a natural result of the origin of the method), this teaching methodology has recently received attention in the field of medical education. Dr. Robert Weisman, professor of Biochemistry at the University of Texas Health Science Center, has employed and researched the use of this teaching method in a medical school course in biochemistry. After piloting this teaching method with a small group (40), Dr. Weisman decided to teach the entire course in this manner. His course consisted of 18 units of material, quizzes, proctors, and one final exam. Also, for comparison, the students took the Association of American Medical Colleges (AAMC) Achievement test in Biochemistry. Weisman and Shapiro (1973)

report that the biochemistry class, taught in the PSI method, had a mean score about one standard deviation higher than the mean of other medical students taking the same standardized examination (AAMC test) as a biochemistry final exam the previous year.

This brief outline of the PSI method and some of the evidence of its success in psychology and biochemistry set the stage for presenting the Utah MEDEX adaptation of the PSI method.

Operations

Several instructional problems exist in the educational system of the present MEDEX training program. First, and probably the most important, is the heterogeneous backgrounds and experiences of the incoming trainees. All have some experience in primary care, but this is where the similarity ends. Some are strong in emergency care. Others have worked in family practice clinics. Some trainees have never interpreted lab reports. Some have high reading skills; others low. Study habits vary from good to practically non-existant. Medical vocabulary differs widely from one trainee to another. In short, the variety of skills and knowledge of the entering class reflects their varied experiences.

These individual differences lead to another problem, how to operate a course to accommodate this variety? How does an instructor prevent some students from being bored, while others get lost in the complexity of the new material? In both cases, the student's time is wasted and the instructor is ineffective in communicating the material.

Another area of concern is that of teaching faculty, usually physicians, asked to teach the trainees. Preparation for classes is not uniform. Some physicians understand the MEDEX concept and try to construct their course to be compatible with it. Others may wish to do so, but do not have enough time to alter their materials from the way in which they are presented to medical school students. Physicians may not be available (for various reasons) at any particular hour during which they are scheduled to teach.

Scheduling becomes a problem. Other doctors may be much more energetic and enthusiastic to talk about some current patient's problems or some new techniques than to teach an assigned topic. Imposed restrictions on the instructors often dampens the spontaneity of the physician and sometimes the students' motivation.

Another problem currently hampering the MEDEX educational program is remediation. How do you discover and help students who do not pass a final exam? Physicians cannot be expected to discover and provide remediation to individual students in the course of a five hour lecture series. Problems related to this are finding out what kind of remediation each student needs and finding out when this help is needed.

Further, are MDs always needed to present the instructional material to MEDEX trainees? Or could other nonmedical personnel deliver the material, supervise practice sessions and administer evaluations? If a coordinated system of preparing and presenting instructional material is used, then physicians could prepare relevant, up-to-date material prior to the entrance of the class and other people could present the materials to the students and monitor their progress. This is the intent of the Utah adaptation of PSI.

THE MANAGEMENT

In order to be eligible to take the national certifying examination, and to be certified by this project, a MEDEX student must attain a minimum level of competency. Progress to certification will be measured by the number of points the student accumulates through the various learning activities presented to him. Learning activities might include taking quizzes, performing procedures, writing interpretations, operating equipment, attending seminars, devoting a number of hours to clinical experience and serving in an emergency room.

As is currently the practice, an entering student is assigned an advisor. This person will be on the MEDEX staff and will serve as counselor, coach, friend and teacher to that trainee for the next year. The advisor will monitor the trainee's progress throughout the didactic as well as the preceptor phases of his training. The advisor will encourage good study habits

and attempt to promote high motivation in the trainee. The advisor may also help the trainee with any personal problems, if the student seeks such help. Finally, the advisor will continually remind the trainee of his duties and responsibilities as a certified MEDEX and how his current training relates to those duties and responsibilities.

Proctors

MEDEX proctors will only slightly resemble those of the original Keller system. Similarities are that proctors will distribute material, administer evaluations and monitor student progress. Differences from the Keller system proctors are: 1) the MEDEX proctors will not be previous graduates of the program, 2) the proctors will have full responsibility for the content material, 3) they will provide or arrange for remediation and 4) proctors will report scores to advisors.

The proctors may be physicians, residents, graduate Medex, education specialists and administrators. They will not necessarily be responsible for the construction of course materials. Of course, if the course coincides with the person's specialization, he may also be the developer of the materials.

The proctor will serve as the central figure for students in a given course. He will administer and supervise the taking of evaluations, grade them and provide direct or indirect remediation. In other words, the proctor will introduce students to the course, explain its operation, distribute materials and explain any other particulars pertinent to his operation of that course. The proctor will also be responsible for collecting and arranging for materials to be prepared prior to the beginning of his course. He will record points accumulated, quizzes taken and passed and those students who have finished his course at the required level of competence.

Resource Faculty

These are the specialists who will prepare the instructional materials and identify resources pertinent to those materials. They will also aid the proctors in understanding the material which the proctors will manage.

This understanding is vital to enable the proctors to assist his students. If the faculty member operates his own course, the proctor-resource person distinction will of course dissolve.

Educational Technologist

The educational technologist will serve as liaison between the faculty member who is preparing instructional materials and the proctor who will deliver the course. The educational technologist will work with the faculty helping them to organize, format and adjust materials to be compatible with the MEDEX Instructional System. He will also assist in the writing of quizzes and final exams, and he will program the materials to facilitate individual, self-paced instruction. The course materials will be continually cross-checked with the MEDEX Instructional Objectives in order to maintain both relevance to the program and appropriate level of medical sophistication. Further duties of the educational technologist include:

1) monitoring proctor activities to assist them in smoothing out their course operation;
2) researching media catalogs, libraries and other resources for up-to-date readings, texts, simulators and other medical education equipment;
3) in cooperation with other staff members, conduct formative research evaluations in an effort to maintain an on-going self-analysis and correction.

THE CONTENT

Curriculum

Presently, the curriculum is being reorganized. An outline of the divisions of curriculum can be seen in the following:

I. Data Collection
II. Analysis and Interpretation
III. Health Care Strategies and Procedures
IV. Health Care System

Major Divisions of Utah MEDEX Instructional Objectives

Further detailing of these major divisions can be seen in Appendix II. These divisions are included to give the resource people some idea of where their course fits into this program and toward what medical slant they should gear their materials.

When the Utah MEDEX Instructional System is operating in full force, the entire curriculum will be individualized, self-paced instruction with contingent requirements for progressive movement toward certification. Faculty having constructed appropriate instructional materials, proctors administering the courses and the technologist revising materials and procedures, the students will move through the entire curriculum without the need for instruction.

The present status of the Instructional System is, at best, transitional. There are only a few examples of the format for course material. Ophthalmoscopy, Problem Oriented Medical Records and Heart Sounds are three examples already prepared. (These may be requested by contacting the MEDEX office.) The syllabus for the Ophthalmoscopy course materials is included (see Appendix V). It will serve as an example outline of what should go into a course, its format and its constituents. Further comment on these details is reserved for the next section.

Course Formatting and Preparation

In moving toward the goal of an entirely individualized, self-paced curriculum, at least two major steps are required. First, in the transitional years, MEDEX will continue to rely on the traditional lecture-discussion method of teaching. However, faculty will be asked to prepare at least three items to begin development of self- instructional materials. The needed material includes: 1) a syllabus for the course, 2) objectives for the course and 3) evaluations (quizzes and tests).

Six (6) specific tasks are necessary to facilitate attainment of this project's future education plans. The tasks are:

1) Outline of lecture topic(s) divided into one or two-hour time sessions.

2) Five to seven (5-7) study questions for each of these lecture sessions (questions should derive directly from the lecture material).

3) Objectives for each session -- separated into conceptual and behavioral objectives (knowing and doing objectives).

4) List of movies, slide series, video tapes, materials (e.g., textbooks, journal articles, etc.), equipment (e.g., ophthalmoscope, stethoscope, etc.), needed or used for demonstration or practice with the appropriate sources, authors and/or publishers.

5) Five to seven questions with written answers for each segment of instruction (questions may be short answer essay, fill-ins, multiple choice, identifications, labeling of pictures or diagrams). These questions will become quizzes on your lecture material.

6) One final exam for each logical unit or topic of study with written answer for each of the questions.

These tasks will be completed prior to teaching and in a cooperative, working relationship with the MEDEX educational technologist.

This type of course formatting and preparation will facilitate the transition and movement toward the second step. In the final form, a course will be maintained and used without direct, continuous medical faculty input. Course preparation during the transitional phase, as well as those already in an individualized, self-pacing format, will promote independent learning.

Some instructional materials may be developed from commercially produced teaching and media packages already available, possibly needing only minor adjustments. Some may employ simulators (e.g., the eye mannequins, heart sounds simulator, pelvic model) which will give the student training and practice. They will only need instructions and some evaluations. Some courses may not be so easily converted due to the massive amount of material needing to be taught. Others may be

more "knowledge" topics than "practice" topics (or courses). These may be the most difficult to align with the MEDEX concept and instructional philosophy.

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APPENDIX E

A Format for Recording the Medical History and the Complete Physical Examination,

A Sample Physical Examination of the Chest,

and

A Sample Basic Physical Examination and Discussion of Findings

A Format for Recording the Medical History and the Complete Physical Examination

I. Recording Information

Date, time, place, author, referring physician

II. Source and Reliability

Source: Patient, medical records, friend or relative, and/or referring physician

Reliability: Probable reliability of the history, given the source

III. Patient Profile

A social history in narrative style. May be abbreviated with complete social history later.

Abbreviated: Name, age, race, sex, marital status, city of residence, and occupation

IV. Chief Complaint

Patients' problem(s) in patients' own words
Short -- outline form

V. History of Present Illness (HPI)

Narrative regarding the patients' complaints
Use of the following dimensions: chronology (onset, duration, etc.), bodily location, quantity, quality, setting, aggravating and alleviating factors, associated diseases, past evaluation and/or treatment

VI. Past Medical History (PMH)

Outline fashion with appropriate dates:
General health

Childhood health (illness and surgery)
Adult health
  Illnesses
  Surgery
  Obstetrical history
Accidents and injuries
Allergies and immunizations
Current medicines/prescriptions

VII. Family History (outline form)

Family health record: age, diagnosis, mainfestations of illness and/or date of death for father, mother, siblings, and spouse and children

Family disease screening: diabetes mellitus, cancer, heart disease, hypertension, anemia, bleeding disorder, epilepsy, tuberculosis, asthma, strokes, gout, glaucoma, and kidney disease

Family economic situation, health insurance

VIII. Personal/Social History

A complete social history may be placed at the beginning of history under "Patient Profile"
If abbreviated Profile is done, place additional information here in narrative style

Home Environment: past residence, home atmosphere, family relationships

Social Adjustment: education, work record, military history, community activities, religious activities, and friendships

Sexual History: adjustment

Marital History: marriages and duration, marital satisfaction and sexual adjustment

Personal Habits: sleep, exercise, relaxation, hobbies, smoking, caffeine, and alcohol/drug use

Occupation: environment, satisfaction, income

IX. Review of Systems (ROS -- abbreviated here -- outline style)

General:	fatigue, weight change, fever-chills, night sweats, weakness
Integument:	skin, hair, nails
Head:	headache, dizziness, syncope, convulsions, history of trauma
Eyes:	visual acuity, blurring, tearing, diplopia, pain
Ears:	hearing, tinnitus, pain, discharge, mastoid pain, vertigo
Nose:	discharge, obstruction, pain, epistaxis, smell
Mouth:	sores, toothache, gingival swelling or bleeding, breath, taste
Throat:	pain, recurrent infections, hoarseness
Neck:	swelling, goiter, pain, limitation of motion
Breasts:	pain, masses, nipple discharge, history of trauma, self breast exam, and/or history mammograms
Respiratory:	shortness of breath, dyspnea on exertion, cough, sputum production, hemoptyois, chest pain, wheezing, recurrent infections, data/diagnosis of last chest X-ray
Cardiovascular:	angina, palpitations, syncope, dyspnea, paroxysmal nocturnal dyspnea, orthopnea, pedal edema; rheumatic fever or murmur; varicosities, Raynauds phenomenon, intermittent claudication, obesity, hypertension, diabetes mellitus, hyperlipidemia, smoking, sedentary life style, Type A personality
Gastrointestinal:	appetite, weight change, nausea and vomiting, belching or reflux, hematemesis, jaundice, melena or rectal bleeding; abdominal pain, diarrhea, constipation, change in bowel movements, foul smelling stools; laxative use/abuse
Genitourinary:	dysuria, pyuria, hematuria; decreased stream force, hesitancy, terminal dribbling; frequency, urgency, nocturia, incontinence; urinary tract infection, stones, gonorrhea, or syphilis
Genital Tract:	Female--menses, dysmenorrhea, dyspareunia, intermenstral or post menopausal bleeding, vaginal discharge; desire of pregnancy, number of pregnancies, abortions, deliveries; contraceptives; date/result of last pap smear Male--penile pain or discharge, testicular pain or masses, penile skin lesions, erection and ejaculation capability; prostate problems, hernias, vasectomy

Musculoskeletal;	back, neck, or shoulder pain; pain, swelling, redness or stiffness of joints; limitations of motion; muscle pain, wasting, or weaknesses, trauma, fractures
Hematopoietic:	anemia, lymphadenopathy, easy or spontaneous bruising, excessive bleeding
Endocrine/Metabolic:	growth and development, temperature intolerance, goiter; polydipsia, polyphagia; libido; diabetes mellitus, gout, hyperlipidemia
Nervous System:	personality or behavior change, abstract reasoning and math ability, orientation, memory, change in speech, tremor, paralysis, ataxia, muscle weakness or paresthesias, stroke
Psychiatric:	nervousness, anxiety, irritability, insomnia, hallucinations, crying, sexual problems; depression or suicidal inclinations; psychiatric evaluation and prescription

Physical Examination

General Appearance

Vital Signs:	temperature, pulse, respirations, blood pressure (both arms sitting, lying and standing; perform blood pressure on leg if necessary), weight and height
Integument:	skin (eruptions, lesions, color, turgor, temperature, scars), hair, nails
Lymph Nodes:	location, size, consistency, mobility, tenderness
Head and Neck:	masses, scars, tenderness; arterial pulses and bruits; facial asymmetry or edema; tracheal deviation; thyroid, salviary, and parotid glands
Eyes:	visual acuity, visual fields, coordination of extraocular movements; external eye (lids, bulbar and palpebral conjunctivae, sclera, cornea); pupils (size, equality, reaction to light and accommodation)
Ophthalmoscopic Exam:	iris (color, defects), lense (opacities), vitreous (opacities), discs (color, cupping, margins, pigmentation); arteries and veins (ratio, tortuoisity, A-V nicking, color, distribution); maculae; retinae (hemorrhage, microaneurysms, exudates, pigmentation, detachment, scars, tumors).

Ears:	external examination, Weber and Rhine test, gross test for hearing, examination with otoscope of canal and tympanic membrane
Nose:	mucus membranes (color, discharge, edema, lesions); patency; septum (deviation, perforation); turbinates (color, edema, discharge); frontal and maxillary sinuses (tenderness, transillumination)
Mouth and Throat:	lips, buccal mucosa, tongue, teeth, gums, pharynx
Breasts and Axilla:	discoloration, masses, tenderness, skin retractions, nipple secretions; breast exam sitting and recumbent
Thorax and Lungs:	inspect contour, symmetry, and motion of chest during respiration; palpate for tenderness, masses, and fremitus; percuss diaphram after excursion, dulness vs. resonance; ausculate for wheezes, rhonchi, and/or rales
Heart:	inspect, palpate, percuss and auscultate the heart, percuss left and right cardiac borders, point of maximum impulse, heaves, lifts, and/or thrills, S_1, S_2, gallops, murmurs, and/or rubs
Vascular System:	inspect, palpate (contour and timing) and auscultate arteries both right and left; cartoid, brachial, radial, abdominal aortic, femoral, popliteal, dorsalis pedis, and posterior tibial; extremity elevation pallor, dependent rubor, venous filling time, and temperature; inspect and palpate for varicose veins and edema of legs -- if present conduct Brodi-Trendelenburg and/or Perthes' test, check for tenderness, warmth, and for positive Homans sign
Abdomen:	inspect, auscultate, percuss, palpate abdomen, examining liver, kidneys, spleen, bowel; uterus and ovaries in female; masses or tenderness, aorta, vascular bruits; ascites
Rectal:	anus (fissures, sinus tracts, external hemorrhoids, lesions); rectum (sphincter tone, internal hemorrhoids, masses); prostate (size, consistency, presence of tenderness)
Genitalia:	Male--penis: circumcision, prepuce, urethral meatus, glans, shaft; scrotum: testes, epididymis, spermatic cord, cysts; perineum; transillumination of masses present; hernias; culture penile discharge Female--external genitalia: labia, clitoris, introitus, urethral orifice, perineum (erosions, scars, inflammation, discharge, masses, perineal support);

pelvic examination: vagina, cervix; fundus; fallopian tubes; ovaries; adnexal areas; and cul-de-sac (discharge, tenderness); perform pap smear

Musculoskeletal: muscle strength, wasting, and tenderness; joint deformity, swelling, redness, tenderness, and range of motion; spine - posture, deformity (Kyphosis, scoliosis, Lordosis), masses, tenderness, range of motion

Neurological: Mental status -- orientation, abstract reasoning, math ability, memory, etc.

Cranial Nerves:

I. Olfactory (smell)
II. Optic
III. Oculomotor
IV. Trochlear
V. Abducens
VI. Trigeminal (sensory, motor, corneal)
VII. Facial (sensory, motor)
VIII. Acoustic (auditory, vestibular)
IX. Glossopharyngeal (sensory/pharynx and post. 1/3 tongue motor/pharynx)
X. Vagus (sensory/motor -- gag + larynx)
XI. Accessory (motor: Trapezii -- shoulder shrug, Sternocl. -- turn head/neck against resistance)
XII. Hypoglossal (motor -- tongue)

Motor/Gait/Station -- muscle strength, tone; evaluate for paralysis, tremor, rigidity, fasiculations, tics, and myotonia; gait, heel-to-toe, heel and toe walking, hops; hand grip; Romberg
Sensory -- pain, vibration, temperature, light touch, position, discrimination-stereognosis
Reflexes -- deep tendon, superficial, and pathologic - Babinski

A Sample Physical Examination of the Chest

Equipment: Stethoscope

Position: Patient sitting with arms at the side

A. Inspect and palpate the chest to determine:

1. AP diameter
2. Kyphosis or scoliosis
3. Use of accessory respiratory muscles, muscle wasting or hypertrophy
4. Equal expansion of the chest on insipration
5. Vocal fremitus (vibrations from the larynx when the patient speaks)
6. Supraclavicular space bulging with expiration
7. Lymph glands - supraclavicular

B. Palpate the PMI and trachea for pos'tion of mediastinum

C. Percuss--the posterior chest with patient's arms crossed, anterior and lateral chest with hands on top of head, for

1. Normal versus abnormal percuss on note
2. Diaphragmatic movement (excursion)

D. Auscultate these same areas for:

1. Change in breati. sounds
   - decreased vesicular or bronchovesicular breathing
   - increased vesicular or bronchovesicular breathing
   - bronchial breathing
   - absent breathing
2. Presence of adventitious sounds
   - rales (inspiratory/ post-Fassive)
   - rhonchi
   - wheezing (inspiratory, expiratory, forced expiratory)
   - pleural friction rub
3. Other
   - E-to-A change (egophony)

A Sample Basic Physical Examination and Discussion of Findings

Basic maneuvers performed during any general screening examination may uncover abnormalities suggestive of pulmonary disease.

A. Inspection

Neck:
- Tracheal shift

Tongue and soft palate:
- Cyanosis

Hands:
- Clubbing of fingers
- Cyanosis of nail beds
- Nicotine stains

Respiratory pattern:
- Rate
- Rhythm
- Depth
- Noise on respiration

Thorax:
- Increased AP diameter
- Kyphosis and/or scoliosis
- Asymmetry or splinting
- Muscle wasting
- Pulmonary posture (tripod)

B. Palpation

Neck:
- Subcutaneous emphysema

Thorax:
- Tenderness/pain
- Lymph nodes - supraclavicular enlargement
- Fremitus - increased or absent

C. Percussion

Lung fields:
- Increased resonance
- Decreased resonance (dulness)

D. Auscultation

Lung fields:
- Increased and altered breath sounds
- Decreased and absent breath sounds
- Adventitious sounds (rales, rhonchi, wheezing, pleural rubs)

E. Possible Findings

APPENDIX F

Interviewing Techniques

This discussion of interviewing techniques was provided by Ms. Suzanne B. Greenberg, Director, Physician Assistant Program, Northeastern University. These materials were not developed under this contract.

Interviewing Techniques

Technique	Example	Comments
1. Using silence		Positive accepting silence or i.e. encourages patient to speak. Gives patient time to organize thoughts. Reduces pace of interview. Gives you opportunity to assess non-verbal aspects.
2. Accepting	Yes Uh hum I follow what you said Nodding	Signifies you have heard and follow trend of thought; non-judgmental.
3. Giving recognition	Good morning, Mr. S. I notice that you have combed your hair You've laced a wallet	Shown recognition of the patient as a person, or an awareness of change. Positive reinforcement.
4. Offering self	I'll sit with you a while I'll stay here with you I'm interested in your comfort	Unconditional acceptance; you make yourself available, your presence, interest and desire to understand.
5. Giving broad openings	Is there something you'd like to talk about? What are you thinking about? Where would you like to begin?	Allows patient to take the initiative in introducing topic for discussion.

Technique	Example	Comments
6. Offering general leads	Go on And then? Tell me about it	Given patient encouragement to continue. Leaves direction of discussion to patient.
7. Placing the event in time or sequence	What seemed to lead up to? Was this before or after? When did this happen?	Clarifies relationship of events in time. Helps both you and patient see events more objec ively and in perspective. May identify recurring patterns of difficulties and point out needs.
8. Making observations	You appear tense. Are you uncomfortable when -- I notice you're biting your lips.	Verbalizing what is perceived, calls patient's attention to something he is unaware of. Offers patient something to which he can respond.
9. Encouraging description of perceptions	Tell me when you are feeling anxious. What is happening? What does the voice seem to be saying?	Asking patient to verbalize what he perceives. To understand patient you must see things as they seem to him. Provides basis for understanding.
10. Encouraging comparison	Was this something like --? Have you had similar experiences?	Asking that similarities and differences be noted; may bring out recurring themes; also helps patient evaluate feeling about, and influence of events.
11. Restating	Pt: I can't sleep, I stay awake all night Ns: You have difficulty sleeping	Repeating the main idea expressed gives patient evidence their idea has been communicated effectively/encourages him to continue.

Technique	Example	Comments
12. Reflecting	Pt: Do you think I should tell the doctor? Ns: Do you think you should?	Directing back to patient the questions, feelings and ideas. Encourages patient to accept as part of himself his own ideas and feelings, and indicates his point of view is of value.
13. Focusing	This point seems worth looking at more closely.	Concentrating on simple point helps patient center thinking and to understand ideas.
14. Exploring	Tell me more about that. Would you like to describe it more fully? What kind of work?	Delving further into a subject or idea, to explore more fully certain experiences, but you should not probe.
15. Giving information	My name is _____ Visiting hours are _____ My purpose in being here is _____	Makes available the facts the patient needs; helps build up trust as well as give knowledge. Defines role of interviewer.
16. Seeking clarification	I'm not sure that I follow. What would you say is the main point of what you said?	Seeking to make clear that which is vague or not meaningful. Helps patient clarify his own thinking.
17. Presenting reality	I see no one else in the room. That sound was a car backfiring. Your mother is not here, I'm a nurse.	Offers for consideration that which is real; indicates an alternate line of thought for patient, but not trying to convince him he is wrong.

Technique	Example	Comments
18. Voicing doubt	Isn't that unusual? That's hard to believe. Really?	Expressing uncertainty as to reality of patient's perceptions. May encourage patient to reconsider and reevaluate what has occurred. Neither agrees nor disagrees.
19. Seeking consensus	Tell me whether my understanding agrees with yours. Are you using that word to convey the idea that ____?	Searching for mutual understanding for accord in meaning of words. Should have essentially same meaning.
20. Verbalizing the implied	Pt: I can't talk to anyone. It's a waste of time. Ns: Is it your feelings that no one understands? Pt: My wife pushes me around just like my mother did. Ns: Is it your impression that all women are domineering?	Voicing what patient has hinted or suggested. Putting into words what has been implied tends to make discussion less obscure, but you should not be blunt.
21. Encouraging evaluation	What are your feelings in regard to ____? Does this contribute to your discomfort?	Asking patient the quality of his experiences and to consider people and events in the light of his own set of values, to evaluate the way things affect him. Discourages patient from adopting ideas and opinions of others.

Technique	Example	Comments
22. Attempting to translate into feelings	Pt: I'm dead. Ns: Are you suggesting that you feel lifeless? Pt: I'm way out at sea. Ns: It must be lonely.	Seeking to verbalize the feelings that are being expressed indirectly. It is the latent meaning of the expression that demands attention, enables patient to feel understood.
23. Suggesting collaboration	Perhaps you and I can discuss this and discover what produces your anxiety.	Offering to share, to work together with patient for his benefit. Offers patient a relationship in which he can identify his problems in living with others.
24. Summarizing	Have I got this straight? You've said that _____. During the past hour you and I have been discussing _____.	Organizing and summarizing that which has gone before; seeks to bring together important points and to give each an awareness of progress made towards greater understanding.
25. Encouraging formulation	What could you do to let your anger out harmlessly? Next time this comes up, what might you do to handle it?	Asking patient to consider kinds of behavior likely to be more appropriate in the future. Helping patient plan future actions.

APPENDIX G

Methods for Appraising the Learner

The materials in this appendix were provided by individual programs to the project. They are presented to provide illustrations of methods for appraising the learner. These materials were not developed under this contract.

The following materials were reproduced with the permission of the Johns Hopkins University, School of Health Services, Health Associate Program.

JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

CLINICALLY INTEGRATED SIMULATION

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Marsha Grayson
Catherine Nugent
Stuart L. Oken

JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

CLINICALLY INTEGRATED SIMULATION*

To assess the efficacy of the training program and individual student skills, a controlled environment using simulated patients was designed to overcome the lack of standardization in the actual clinic situation. Each student is evaluated by two health associate faculty members: a medical practitioner and a bheavioral scientist. The student performs a complete, initial interview with a simulated patient in 45 minutes while being observed through a one-way mirror. The interview is video-taped for replay. Although the physical examination is not video-taped, the 4 video cameras are used so that faculty may observe the physical examination from the control booth begind the one-way mirror. The maximum time allowed for the physical examination is 40 minutes. Following 5 minutes to prepare, the student provides an oral case presentation and written problem list. At the end of the session, the faculty observers and student share in their percpetions and feelings about the student's skills.

Capatilizing on the content of the clinical situation, the faculty developed 4 case histories focusing on upper respiratory infections. Each case history includes pertinent biological and psychological/sociological components related to the presenting problem. In addition, each case includes relevant and positive findings in the past medical and family history. An integral component of the present illness is the patient's misconceptions, attitudes and fears. All aspects of the cases were designed for similarity.

Four drama students from local universities took the part of the patients. The patient-actors were trained in approximately 5 hours to: (1) provide an accurate and complete medical history presenting only pre-determined data, (2) simulate

physical findings as appropriate, for example, positive Rinne and Weber tests for hearing loss, and (3) reflect an appropriate affective state as related to the current life stiuation. A primary goal of the training protocol is to ensure similarity among the patients' presentations, not only in information-giving but in patient affect and dynamics of patient-practitioner interaction.

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* From "Evluation of Students' Clinical Skills" by Catherine Nugent, Marsha Grayson, and Stuart L. Oken, paper presented at the Fifth Annual Conference on Health Practitioners, Houston, Texas, April 1977.

JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

COVER SHEET FOR FACULTY
FOR EVALUATION OF STUDENTS
CLINICALLY INTEGRATED SIMULATION
* * * * * * * * * * * * * * * * * * *

FACULTY: _____

STUDENT: _____

DATE: _____

PROGRAM: Health Associate

YEAR: Junior

TERM: Spring

PATIENT: _____

LOCATION: Video Studio - Room #255

SCHEDULE:

_____	Mon.	1:00 - 3:00 PM
_____	Mon.	3:00 - 5:00 PM
_____	Tues.	10:00 -12:00 AM
_____	Tues.	1:00 - 3:00 PM
_____	Wed.	1:00 - 3:00 PM
_____	Wed.	3:00 - 5:00 PM
_____	Thurs.	10:00 -12:00 AM
_____	Thurs.	1:00 - 3:00 PM
_____	Fri.	1:00 - 3:00 PM
_____	Fri.	3:00 - 5:00 PM

PLEASE RETURN ALL EVALUATION FORMS TO CATHY NUGENT, ROOM 459. THANK YOU.

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Marsha Grayson
Catherine Nugent
Stuart L. Oken

THE JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

INSTRUCTIONS FOR FACULTY FOR THE CLINICALLY INTEGRATED SIMULATION

NOTE: PLEASE RETURN FORMS TO CATHY NUGENT, ROOM 459

The Clinically Integrated Simulation is designed to: 1) Evaluate students' clinical skills and 2) Evaluate the curriculum. CIS is a component of the Skills course and students must receive a Pass in each area assessed to complete (pass) the simulation. For Interpersonal, Physical Examination, and Health Education Skills, the pass score is pre-determined based on previous results. The pass score for data gathering, problem list and educational diagnosis will be based on the results for the entire student group. Students will be notified of their pass/incomplete status one week after all of the simulations have been completed. Because of the varying scoring methods, it will be impossible for the faculty observers to tell students if they have passed or which parts they have passed at the time of the simulation. Students who do not pass will have thirty days to work with specific faculty persons in the areas which were incomplete and then be reevaluated.

The instructions below should be used as a guide in observing and evaluating the students.

Method

Students will conduct an initial, complete interview and physical examination with a simulated patient. All case histories for the simulation will focus on a similar presenting problem -- upper respiratory infection. The interview and physical will be observed by two faculty members - a health practitioner and behavioral scientist.

The simulated patient is trained to portray the signs, symptoms and emotional state of a "real" patient. She/he has been prepared to give an accurate medical history, to simulate physical findings as appropriate, and to reflect an emotional state consistent with the medical condition and present life situation presented in the simulated case history.

The interview will be video-taped, but the physical examination will not be taped. During the interview and physical the faculty observers will be in the control room viewing the interview and physical through a one-way mirror. The schedule is of course very tight and should be adhered to as much as possible.

I. Student Interviews Patient: 45 minutes (maximum)

Observe student's interview with simulated patient. While observing the interview on video-tape, evaluate the student in two areas:

Interpersonal/Communication Skills
Data Gathering Skills

(over)

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A. Interpersonal Skills - Form I

This form focuses on the process of the interview. The following steps should be taken when rating students: (1) Determine if behavior occurred, (2) If yes, how close does the student behavior correspond to your notion of the ideal practitioner in this situation.

There are 35 behavioral items listed and the student should be rated as follows:

1 = Omitted
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done
0 = Not applicable to this Situation

B. Data Gathering Rating Form - Form II

This form focuses on the content of the interview and includes all the pertinent information that was given to the simulated patient. For each case (there are four different cases), the number of items vary. Prior to each item there is a blank (e.g._____ Has severe headaches). Indicate with a check (✓) in the blank items that were mentioned. Items that were not either reported by the patient or elicited by the student practitioner should not be checked. If the information reported by the patient is not exactly identical to the information on the form but is similar, the item should be check (e.g. The patient said her mother was 54 years old and in good health, the form shows _____Mother is 56 years old and in good health).

Students should obtain a complete history during this time. However, they may remember to ask certain questions during the physical exam and should be given credit for obtaining the data. They should not do a history during the physical exam.

II. Student Performs Complete Physical Examination: 40 minutes (maximum)

The physical examination will begin after the simulated patient has changed into a hospital gown after the interview (5 minutes). During the physical, the faculty observers will be in the control room. If you cannot adequately observe the examination you should knock on the door and introduce yourselves as supervisors in the clinic. If the student has questions during the physical examination, i.e., a specific skill or test he/she is unsure of, something he/she saw or felt and didn't understand, he/she should either get the faculty observers or ask questions at the end of the physical exam. During the physical the students will be assessed on:

Psycho-Motor Skills
Broad Range of Interpersonal Skills and
Health Education

A. Physical Examination Skills Rating Form - Form III

This form is a check list of skills relating to each part of the body which should be performed during the physical examination. All items on this form must be rated in one of three categories:

2 = Done
1 = Done, but Incomplete
0 = Not Done

Remember to clearly rate each item. The students' Pass/Incomplete status on the physical exam will be based on these ratings.

The physical examination will not include the following:

Neurological - However the cranial nerves should be done except for taste and smell

Musculo-skeletal
Pelvic and genital
Rectal

Form III (Physical Examination Skills) should be filled out by the health practitioners.

B. Interpersonal Skills and Health Education Form - Form IV

This form is designed to assess students in a broader range of behaviors than during the interview. For interpersonal skills and health education, the students are rated in five areas each; the student should be rated for each item as follows:

1 = Omitted
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done

Form IV (Interpersonal Skills and Health Education) should be filled out by the behavioral scientists only.

III. Student Gives Oral Presentation: 20 minutes (maximum)

After the physical examination the student will have 10 minutes to prepare for the oral presentation. The student can use the A-V cubicle to prepare the oral presentation. At the end of the ten minutes, one of the faculty observers should get the student for the oral presentation. The presentation should include: a) All positive and pertinent negative findings for the Present Illness, Past Health, Family Health, Review of Systems and Physical Examination (the student should report the positive physical findings which are listed on the oral presentation sheet); b) Personal/Social History; c) Problem List; d) Educational Diagnosis.

(over)

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Oral Presentation Check List - Form V - This form incorporates the process and content of the oral presentation. All items on this form should be rated as follows:

1 = Omitted
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done

This form should be filled out by both faculty observers.

On the back of this form there is a list of items for the Problem List and the Educational Diagnosis. We have tried to devise a system to accomodate the overlap in the items for the Problem List and the Educational Diagnosis. For each item given by the student on the Problem List check (✓) the left side of the item; for each item given by the student for the Educational Diagnosis check (✓) the right side of the item.

IV. Feedback Between Student and Faculty Observers: 15 minutes (maximum)

This session is designed to give attention to explicit areas of the students' strengths and weaknesses. Both the interview and physical examination should be included in feedback. It is helpful to first ask the student how he/she felt doing this, how he/she thought it went, etc. It would also be helpful to include critical incidents as examples rather than providing global areas of assessments. If the student or faculty observers feel a need for a longer feedback session (e.g., to go over the video-tape or discuss various areas of concern at length), they should arrange to meet at another time which is convenient.

RELIABILITY:

In order to help make your assessments of the students accurate and objective, the following list of rating errors is included. Please be conscious of your own tendency to make these errors as you complete the evaluation forms. In addition, please review the forms before the evaluation to ensure your familiarity with them.

1. Error of leniency: Raters tend to rate those whom they know well or like higher than they should.

2. Error of Central Tendency: Raters hesitate to give extreme judgments and thus tend to displace very high or very low ratings in the direction of the average or typical candidate in the group.

3. Halo Effect: Raters tend to make judgments on one trait on the basis of their feelings about other characteristics of the examinee. For example, your feelings about the examinee's appearance may color your views of his/her diagnostic ability.

4. Logical Error: Raters tend to give similar ratings for traits that seem logically related in the mind of the rater. For example, there may be a tendency to give similar ratings on diagnostic ability and oral verbal ability when this is not justified.

5. Proximity Error: Raters tend to give similar ratings on traits which are adjacent to one another on the rating form.

6. Contrast Error: Raters tend to rate individuals in the opposite direction from the rater's perception of his/her own ability on a given trait. For example, if a rater sees her/himself as having an extremely high level of intellectual curiousity, he/she will tend to rate examinees lower on this trait than most other raters

We hope that you will enjoy participating in these exercises. We share in common their purpose--devising innovative and quality teaching and evaluation methods and assuirng high levels of competence in the practice of primary care medicine.

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JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

CLINICALLY INTEGRATED SIMULATION

IDENTIFYING INFORMATION

NAME:	Carol de Andrade
ADDRESS:	3701 Stevenson Lane 21204
PHONE:	821-8554
SS#:	212-42-3894
DOB:	10/27/54
MARITAL STATUS:	Single
OCCUPATION:	Actress - Baltimore Childrens' Theater
RACE:	White
RELIGION:	Catholic
INSURANCE:	BC/BS
TEMPERATURE:	98.6

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JOHNS HOPKINS UNIVERSITY SCHOOL OF HEALTH SERVICES

INTERPERSONAL SKILLS RATING FORM I

NAME OF STUDENT: _____

DATE: _____ NAME OF EVALUATOR: _____

INSTRUCTIONS: For each item listed below the student should be rated as follows:

0 = Not Applicable
1 = Not Done
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done

INTRODUCTION

_____ Introduces self to patient in a respectful and friendly way.
_____ Explains role of self (Health Associate).
_____ Defines and clarifies for patient scope of services practitioner can provide.
_____ Explains purpose of interaction.

FACILITATIVE BEHAVIORS

_____ Seats her/himself in an appropriate manner in relation to the patient.
_____ Pursues investigation of relevant verbal cues.
_____ Follows up on non-verbal cues.
_____ Effectively and smoothly moves from one major area of questioning to another.
_____ Expresses interest and warmth toward patient.
_____ Maintains eye contact.
_____ Tactfully questions patient about inconsistencies.
_____ Avoids use of medical terminology.
_____ Ensures patient understanding.
_____ Uses appropriate interventions to encourage patient to focus on major areas of concern.
_____ Answers patient's questions.
_____ Summarizes what patient has said to clarify for both patient and practitioner.
_____ Allows expression of patient's feelings.
_____ Conveys understanding and/or empathy of patient's feelings.
_____ Offers concrete guidance where appropriate.
_____ Provides appropriate information to patient.
_____ Avoids leading questions.
_____ Avoids unnecessary repetition.
_____ Appearance and manner appropriate during patient interview.
_____ Provides patient opportunity for reflective silences.
_____ Allows patient to complete statement.
_____ Clinician's comfort allows for exploration of sensitive areas.
_____ Avoids questions that are threatening to patient and draws out such information more tactfully.
_____ Uses vocabulary consistent with patient's education and background.
_____ Clinician avoids imposing her/his bias on patient in a non-therapuetic manner.

TERMINATION

_____ Indicates a few minutes in advance when interview is to be terminated.
_____ Summarizes interview and asks if summary is acceptable.
_____ Gives patient opportunity to ask questions.
_____ Indicates how patient can have access to care and explains process of that (and other) institutions.
_____ Clearly states to patient what is to happen next.
_____ Re-emphasizes emotional support and concern.

COMMENTS (Use reverse side)

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HEALTH ASSOCIATE PROGRAM

CLINICALLY INTEGRATED SIMULATION

FORM II - DATA GATHERING EVALUATION

STUDENT: _____ EVALUATOR: _____

DATE: _____ PATIENT: Carol de Andrade

INSTRUCTIONS: Indicate with a check mark ( ) in the blank prior to each item the items that were elicited by or reported to the student practitioner. If an item appearing on the form was not mentioned, do not check the blank.

CHIEF COMPLAINT

_____"I've had a cold for a week."

PRESENT ILLNESS

Symptoms:

_____generally feeling lousy for a week _____thought she was getting better but feeling ill again _____feeling tired again _____has no appetite _____had fever (100°) 1st couple days _____had stuffy, runny nose _____with clear, thin discharge _____for 5 days _____but seems to be getting better _____had sore throat _____ no enlarged or tender glands _____but hurt to swallow _____lasted 4 days _____dry, non-productive cough _____continues _____last night awakened from a nap with decreased hearing on right side _____things "sound dimmer" _____seems same today _____no pain in ear present _____nothing makes it better or worse

Medications:

_____taking Robitussin to relieve cough and runny nose _____takes it as needed _____one "swig" every hour _____tried ear drops _____had no effect on hearing

Patient Concerns:

_____fears a serious hearing loss _____heard from a friend that she may gradually loose her hearing over time

PAST MEDICAL HISTORY

_____normal childhood illnesses _____two episodes of ear aches as a child _____has frequent colds

FAMILY HEALTH

_____mother, age 56 _____in good health _____has hypertension (controlled) _____father, age 57 _____in good health _____five siblings _____3 sisters, _____ages 34,30,28 _____in good health _____2 brothers _____ages 32,25 _____in good health

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(over)

PERSONAL/SOCIAL HISTORY

Current Life Situation:

_____unmarried _____living at home with parents _____recently graduated from Towson State University (B.A. in Theater) _____just started acting job with Children's Theater _____very happy in job _____has begun to develop friends in theater group _____is interested in some men to group

Nature of Family Relationships:

_____patient loves her parents _____is the youngest of 6 children and the only one at home _____would like to move into communal living situation _____feels her parents would not approve _____they do not want her to move out yet _____they don't understand her needs to be independent _____patient has not told parents about concern over hearing _____she feels they will become over-anxious and "baby" her

Personal Habits:

_____smokes 1 pack cigarettes/day for 4 years _____drinks alcohol socially (2-3x/week) _____smokes marijuana socially (1-2x/week) _____drinks 1 cup coffee per day _____good dietary habits _____very weight conscious _____sleeps well _____usually tired at end of day _____has had 2 sexual experiences (intercourse) _____no birth control method

Personal Concerns:

_____afraid that she is loosing her hearing and will miss cues _____conflicted over assuming independent life style away from parents _____guilt and conflict over sexuality _____feels she should not be sexually active yet desires sexual relationships.

REVIEW OF SYSTEMS

_____not contributory

JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

CLINICALLY INTEGRATED SIMULATION

PSYCHO-MOTOR SKILLS RATING FROM III

Student Name_____ Evaluator Name_____

Date _____

INSTRUCTIONS: For each item listed below the student should be rated on each item as follows:

2=Done
1=Done, but incomplete
0=Not Done

OBTAINS VITAL SIGNS
- _____ Measures blood pressure both arms (sitting and supine)
- _____ Count pulse and respiration rate
- _____ Takes oral temperature

HEAD AND NECK
OBSERVE
- _____ Face and skull for deformities, asymmetry, edema
- _____ Skin
- _____ Hair
- _____ Neck for masses, pulsations, venous, distention
- _____ Facial muscles for strength and symmetry

PALPATE - Lymph Nodes
- _____ Anterior cervical
- _____ Posterior cervical
- _____ Post-auricular
- _____ Suboccipital
- _____ Supraclavicular
- _____ Submandibular

PALPATE
- _____ Carotid pulse
- _____ Thyroid
- _____ Trachea
- _____ Face for response to touch with pin and cotton
- _____ Strength of trapezius and sternocleidomastoid muscles

AUSCULTATE
- _____ Carotid artery for bruits

EYES
OBSERVE
- _____ Conjunctiva
- _____ Sclera
- _____ Lids
- _____ Corneal reflex
- _____ Pupils for reaction to light and accomodation
- _____ Extra-ocular movements
- _____ Visual fields
- _____ Acuity

PALPATE
- _____ Globes

PERFORM
- _____ Fundoscopic examination

EARS
OBSERVE
- _____ Pinna
- _____ Canal and tympanic membrane with otoscope
- _____ Palpate Pinna for tenderness
- _____ Hearing acuity(whisper or watch)
- _____ Lateralization (Weber test)
- _____ Air and bone conduction (Rinne test)

NOSE AND SINUSES
- _____ Observe with penlight
- _____ Check patency
- _____ Palpate sinuses

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(over)

PSYCHO-MOTOR SKILLS RATING FROM III

Student Name_____ Evaluator Name_____

MOUTH AND THROAT
OBSERVE WITH LIGHT AND TONGUE DEPRESSOR
_____Lips
_____Teeth
_____Gums
_____Tongue for lesions and deviation
_____Buccal mucosa
_____Pharynx
_____Palate
_____Palatal elevation
_____Gag

THORAX AND BREAST
OBSERVE
_____Thorax for symmetry, deformities
_____Breasts and nipples
PALPATE
_____Axillary lymph nodes
_____Breasts

LUNGS
OBSERVE
_____ For symmetry of expansion
_____ For labored breathing
PALPATE
_____ Tactile fremitus
PERCUSS
_____ All lobes, including apices
_____ For diaphragmatic excursion
AUSCULTATE
_____ All lobes including apices

CARDIOVASCULAR
_____ Observe precordium
PALPATE
_____ Precordium
_____ PMI
_____ Pulses
_____Brachial
_____Radial
_____Femoral
_____Dorsalis pedis
_____Post tibial
_____Poplitial
PERCUSS
_____Cardiac borders

AUSCULTATE
_____All valve areas, lying and sitting
_____Femoral pulses

ABDOMEN
_____Observe
AUSCULTATE
_____ All quadrants
_____ Midepigastrium
PALPATE LIGHTLY
_____ All quadrants
_____ Umbilical area
_____ Inguinal area for hernias and nodes
PALPATE DEEPLY
_____ All quadrants
_____ Lower edge of liver
_____ Spleen
_____ Costovertebral angle
PERCUSS
_____ All quadrants
_____ Upper and lower edge of liver
_____ Spleen

EXTREMITIES
OBSERVE
_____ Skin
_____ Fingernails
_____ Deformities
_____ Limitations
PALPATE
_____ Edema
_____ Tenderness

Complete the following statement from the list below:

During the interview and physical, the patient was _____

a. very difficult to work with.
b. somewhat difficult to work with.
c. not at all difficult to work with.

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HEALTH ASSOCIATE PROGRAM

STUDENT: _____

FACULTY: _____

CLINICALLY INTEGRATED SIMULATION

DATE: _____

ORAL PRESENTATION

INSTRUCTIONS: The student should be rated on each item as follows:

1 = Omitted
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done

SIMULATED PATIENT: Carol deAndrade

PRESENTED INFORMATION IN:

_____ Logical order

_____ Appropriate places

_____ Brief format

_____ Objective manner

PRESENTED POSITIVE AND/OR PERTINENT NEGATIVE FINDINGS FOR:

_____ Present Illness

_____ Past Health

_____ Family Health

_____ Review of Systems

_____ Physical Examination Findings--thyroid not palpable, Rhinne test lateralized to right side, Weber test--bone conduction greater than air conduction, whisper/watch test--can't hear on right side, tonsills intact, chest clear, possibly small breast lump right lower quadrant right breast, rest normal

PRESENTED PERSONAL/SOCIAL HISTORY:

_____ Current Life Situation

_____ Nature of Family Relationships

_____ Personal Habits

_____ Personal Concerns

OVER

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ORAL PRESENTATION

Please check(✓) each item that is reported in the Problem List on the left hand side. Check each item that is reported in the Educational Diagnosis on the right hand side. Add any additional items under Other and check whether it was reported under the Problem List or Educational Diagnosis.

PROBLEM LIST		EDUCATIONAL DIAGNOSIS
_____	URI for one week	_____
_____	Decreased hearing - right ear since last evening	_____
_____	Afraid of loosing hearing & effect on career as actress	_____
_____	Believes ear problem related to childhood illness	_____
_____	Hasn't told parents about hearing problem but has talked with friends	_____
_____	Taking cough medicine and ear drops excessively	_____
_____	Wants to move away from home but feels conflicted because parents don't want her to	_____
_____	Conflicted over sexuality	_____
_____	No birth control method	_____
_____	Smokes 1 pack cigarettes/day for four years	_____
_____	Other (specify):	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

THE JOHNS HOPKINS UNIVERSITY
SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

INSTRUCTIONS FOR STUDENTS FOR THE CLINICALLY INTEGRATED SIMULATION

NOTE: PLEASE RETURN ALL FORMS TO CATHY NUGENT, ROOM 459

The Clinically Integrated Simulation is designed to evaluate in depth the students and the curriculum. CIS provides for standarization of patients and preceptors and, thus, ensures a more equal assessment of students' clinical skills. The results will be available approximately one week after all the simulations have been completed. All data collected during the simulation should be kept confidential.

Method:

An initial, complete interview and physical examination with a simulated patient will be conducted. All the case histories will focus on upper respiratory infections as the presenting problem. The interview and physical examination will be observed by two faculty members--a health practitioner and a behavioral scientist.

The simulated patient is trained to portray the signs, symptoms, and emotional state of a "real patient". She/he has been prepared to give an accurate medical history, to simulate physical findings as appropriate, and to reflect an emotional state consistent with the medical condition and present life situation presented in the simulated case history.

The interview will be video-taped, but the physical examination will not be taped. During the interview and physical, the faculty observers will be in the control room viewing the interview and physical through a one-way mirror. The schedule is very tight and should be adhered to as much as possible.

I. Interview Simulated Patient: 45 minutes (maximum)

The interview is to be regarded as the first clinic visit of the patient. When 40 minutes are up, you will hear a knock on the door and you should begin concluding the interview if you have not already done so.

You should take a complete history giving attention to the presenting problem. The review of systems should concentrate only on those systems relevant to the presenting problem.

At the end of the interview the patient will change for the physical examination. During this time you may, if you wish, use the reserved A-V cubicle to complete your notes on the history, review the history, consider what patient education elements you may wish to include during the physical, etc. You will be notified when the patient is ready.

(over)

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NOTE: YOU MAY BRING ANY REFERENCES THAT YOU CHOOSE, TO BE KEPT IN THE A-V CUBICLE. You may consult them after the history and after the physical in preparation for the oral presentation. The cubicle will be locked when you are not in it, so that any personal references you bring will be safe.

II. Perform Physical Examination: 40 minutes (maximum)

Perform a complete physical examination. Do not do:

Musculo-skeletal
Pelvic and genital
Rectal
Neurological - Except for the cranial nerves. In doing the cranial nerves you do not have to do taste or smell.

During the physical, the faculty observers will be in the control room. If they cannot adequately observe the examination then they will knock on the door and introduce themselves as supervisors in the clinic. If you have any questions during the physical examination, i.e., a specific skill or test they are unsure of, something they saw or felt and didn't understand, deal with them as you would in clinic -- either get the faculty observer or ask your questions at the end of the physical exam. Remember to treat the simulated patient in the same manner you would treat a clinic patient.

When observing the patient, please be sure to tell the health practitioner what you are observing.

During the physical examination, you may need to ask the patient questions that would normally be asked during the interview. You will receive credit for asking these questions during the physical exam, but should remember that the physical exam is not the appropriate time to obtain a complete history.

III. Oral Presentation: 20 minutes (maximum)

After the physical examination you will have 10 minutes in the reserved A-V cubicle to:

A. Prepare for the oral presentation which should include the following:

Positive findings and pertinent negatives from the Present Illness, Past History, Family Health and Physical Examination

Complete Personal and Social History

B. Prepare a working problem list for the oral presentation.

C. Prepare an educational diagnosis for oral presentation. Notes may be used during the presentation.

IV. Feedback Between Student and Faculty Observers: 10 minutes (maximum)

The purpose of this session is to give you feedback with respect to your performance during the interview, physical examination and oral presentation. The interchange between you and faculty observers should include a discussion of your strengths and weaknesses. If you or the faculty members feel a need for longer discussions (e.g., to go over the video tape, discuss more fully areas of concern, etc.) you should arrange another mutually convenient time.

V. Self-Evaluation

After the simulation, there is a student self-evaluation form that should be filled out and returned to Cathy Nugent, Room 459.

You will be notified of the results approximately one week after all of the simulations have been completed. If you do not pass, you may contract for supplemental assistance in a skill area or you may decide to work on your own. In either case the decision will be made on an individual basis and you will have thirty days to work on these skills and be reevaluated.

You will be able to go over your forms in Cathy Nugent's office after all the simulations are completed. If you would like to discuss the forms, make an appointment with the faculty person who observed you during the simulation.

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SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

FORM VII

STUDENT EVALUATION FORM

Name of Student_____

Date_____

I. Rate yourself for the following items:

1 = Omitted
2 = Poorly Done
3 = Adequately Done
4 = Well Done
5 = Exceptionally Well Done
0 = Not Applicable

INTERPERSONAL SKILLS
_____a. Observance of social amenities
_____b. Sensitivity to patients feelings
_____c. Interchange of information between myself and the patient
_____d. Organization and flow of interview
_____e. Attention to environmental factors

CONTENT OF INTERVIEW
_____a. Collection of bio-medical information
_____b. Collection of psycho-social information
_____c. Provided patient education where appropriate

PHYSICAL EXAMINATION
_____a. Examination of relevant areas
_____b. Performance and skills
_____c. Knowledge of pertinent areas

II. What did you see as your major strong points

a. During the interview?

b. During the physical examination?

III. What did you see as your major weak points

a. During the interview?

b. During the physical examination?

(over)

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Student Name_____

IV. Do you feel that this exercise was
_____a. An accurate reflection of your interviewing skills?

_____b. An accurate reflection of your physical examination skills?

V. In what ways was this experience helpful or not helpful to you?

VI. Complete the following statement from the list below:

During the interview and physical, the patient was_____

a. Very difficult to work with
b. Somewhat difficult to work with
c. Not at all difficult to work with

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HEALTH ASSOCIATE PROGRAM

Form VI

Simulator's Rating Form

Student's Name:_____ Simulator's Name:_____

Date_____

SD - Strongly Disagree, D - Disagree, A - Agree, SA - Strongly Agree

		SD	D	A	SA
I. A.	The student practitioner treated me respectfully	1	2	3	4
B.	The student practitioner seemed competent.	1	2	3	4
C.	The student practitioner's appearance was appropriate for a patient interivew and physical examination.	1	2	3	4
D.	The student practitioner's manner was appropriate for a patient interview and physical examination.	1	2	3	4
E.	The student practitioner gave me a chance to tell my own story.	1	2	3	4
F.	I felt he/she was interested in me as a person and not just a "case".	1	2	3	4
G.	The student practitioner avoided excessive details in explaining things to me.	1	2	3	4
H.	The student practitioner avoided using terminology that I didn't understand.	1	2	3	4
I.	The student practitioner provided information that was important to me.	1	2	3	4
J.	The student practitioner did not seem to sit in judgement of me.	1	2	3	4
K.	I felt comfortable about what was going to happen next.	1	2	3	4
L.	The student practitioner seemed comfortable with areas I wanted to explore.	1	2	3	4

(over)

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	SD	D	A	SA
M. The student practitioner's examination was comprehensive.	1	2	3	4
N. The student practitioner helped to make me feel comfortable during the physical examination.	1	2	3	4
O. I was not in physical discomfort or pain during the physical examination.	1	2	3	4

II. A. What were the student's major strong points during the interview?

B. What were the student's major strong points during the physical examination?

III. A. What were the student's major weak points during the interview?

B. What were the student's major weak points during the physical examination?

THE JOHNS HOPKINS UNIVERSITY SCHOOL OF HEALTH SERVICES HEALTH ASSOCIATE PROGRAM

JUNIOR YEAR CLINICAL EVALUATION FORM

Student's Name

Preceptor's Name

Site

Date

Rating Scale

1 - Major deficiencies and/or clear, definable problems (Check & Comment).

2 - Major inconsistencies, both clearly adequate and clearly inadequate performances (Check & Comment)

3 - Minor deficiencies and/or inconsistencies (Check areas needing additional work).

4 - Clearly meeting all expectations appropriate to amount of training.

5 - Clearly surpasses all expectations appropriate to amount of training.

N/A - Not Evaluated/Not Applicable. Please Comment.

DIRECTIONS:

This form is composed of 1) statements defining expected student performance which you will use to evaluate actual student performance, and 2) a section for your unique comments about the student's performance.

Both sections are equally important. Your comments are necessary to assist us in guiding the individual student's learning and should include both positive and negative incidents.

Students are rated on the following seven categories of performance. One of the numbers to the left of each major category should be circled as described under the rating system. This summary rating should be based on the student's performance on the items defined below each category. In N/A is used, please explain in the comment section below the specific category. Also, check to the right of an item where appropriate.

Rating (Please circle)	A. Medical Interview	Not Done	Done Incompletely	Done Needs Imprv.
N/A 1 2 3 4 5	Obtains a well organized interval history pertinent to the presenting problems.	___	___	___
	Conveys understanding and warmth to patient.	___	___	___
	Obtains all pertinent bio-medical data.	___	___	___
	Obtains all pertinent psychosocial data.	___	___	___
	Provides appropriate information and summary to patient.	___	___	___
	Obtains history in a resonable amount of time (1/2 hr. for interval history).	___	___	___

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle) B. Physical Examination

N/A 1 2 3 4 5		Not Done	Done Incompletely	Done Needs Imprv.
	Performs an organized interval physical exam pertinent to the presenting problems.	___	___	___
	Completes exam in a reasonable amount of time.	___	___	___
	Respectful of patients comfort and feelings.	___	___	___
	Accurately identifies and describes physical findings to preceptor.	___	___	___
	Uses psychomotor skills of observation, palpation, percussion, auscultation correctly.	___	___	___
	Explains instruments and procedures to patient.	___	___	___

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle) C. Oral Case Presentation

N/A 1 2 3 4 5		Not Done	Done Incompletely	Done Needs Imprv.
	Presents a concise and accurate statement (15 min.) to include:			
	Psychosocial profile	___	___	___
	Chief complaint	___	___	___
	History of present illness	___	___	___
	Pertinent history and physical	___	___	___
	List of active problems (biomedical, psychosocial, patient concerns)	___	___	___
	Tentative assessment for each problem	___	___	___
	Management plan (in conjunction with preceptor:)			
	diagnostic	___	___	___
	therapeutic	___	___	___
	educational	___	___	___
	referral and follow up plan	___	___	___

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle)	D. Written Patient Record	Not Done	Done Incompletely	Done Needs Imprv.
N/A 1 2 3 4 5	Writes in a legible and organized manner.	___	___	___
	Uses SOAP or CLASSICAL Format.	___	___	___
	Includes all data presented orally.	___	___	___

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)	E. Techniques of Clinical Procedures and Skills	Not Done	Done Incompletely	Done Needs Imprv.
N/A 1 2 3 4 5	Selects and/or performs appropriate laboratory studies under preceptor's supervision.	___	___	___
	Accurately performs clinical tasks.	___	___	___

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle)	F. Professional Responsibility	Not Done	Done Incompletely	Done Needs Imprv.
N/A 1 2 3 4 5	Reliable and responsible.	____	____	____
	Recognizes limitations.	____	____	____
	Dresses appropriately.	____	____	____
	Acknowledges "not knowing".	____	____	____
	Able to work with other health professionals.	____	____	____
	Demonstrates high regard for patients' rights and needs.	____	____	____
	Initiates and pursues on own the learning of relevant knowledge and skills.	____	____	____
	Obtains preceptor's cosignature on all charted information.	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)	G. Problem Solving and Critical Thinking	Not Done	Done Incompletely	Done Needs Imprv.
N/A 1 2 3 4 5	Synthesizes and analyzes all clinical data correctly (hx., p.e., lab., etc.)	____	____	____
	Correlates clinical and laboratory data.	____	____	____
	Correlates didactic knowledge with clinical findings.	____	____	____
	Accurately determines major active problems.	____	____	____
	Distinguishes normal from abnormal findings.	____	____	____
	With preceptor's help formulates tentative assessment for each problem.	____	____	____
	With preceptor's help formulates management plan:			
	diagnostic	____	____	____
	therapeutic	____	____	____
	educational	____	____	____
	referral and follow up	____	____	____

COMMENTS AND CRITICAL INCIDENTS

PRECEPTOR'S SIGNATURE

STUDENT'S SIGNATURE

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THE JOHNS HOPKINS UNIVERSITY SCHOOL OF HEALTH SERVICES HEALTH ASSOCIATE PROGRAM

SENIOR YEAR CLINICAL EVALUATION FORM

Students Name _____ Date _____

Preceptors Name _____

Site _____

Rating Scale

5 = A - Student performs at a level of competence well above satisfactory
4 = B - Student performs at a level of competence above satisfactory
3 = C - Student performs at a satisfactory level of competence
2 = D - Student performs at a level of competence below satisfactory
1 = F - Student performs at a level of competence well below satisfactory
N/A - Not Applicable/Not Observed

DIRECTIONS

Students are to be rated on eleven major categories as shown on the following pages. The rating of each category should be based on the students' performance of all of the items defined below each category. If not applicable is used please explain in the comments section below each category. If your opinion, on any of the items listed below each category the student 1) Did not perform in a certain area; 2) Did perform in a certain area but not completely and/or; 3) Needs improvement in a particular area, please check the appropriate space to the right of each item. Please use the comment space for further explanation of the students' performance. We encourage you to use the space marked Comments and Critical Incidents to record positive and negative critical incidents. IN ADDITION, PLEASE CIRCLE YOUR RATING WHERE INDICATED ON THE LEFT COLUMN.

Rating (Please circle)	A. Medical Interview	Not Done	Done Incompletely	Done Needs Imprvmt.
N/A 1 2 3 4 5	Conveys understanding and warmth to patient	____	____	____
	Obtains all pertinent data	____	____	____
	Follows organized format	____	____	____
	Provides appropriate information and summary to patient	____	____	____
	Obtains history in a reasonable amount of time	____	____	____

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle)

N/A 1 2 3 4 5

B. Physical Examination

	Not Done	Done Incompletely	Done Needs Imprvmt.
Follows organized format	____	____	____
Respectful of patients comfort and feelings	____	____	____
Accurately identified and describes physical findings	____	____	____
Uses psychomotor skills of observation, palpation, percussion, auscultation	____	____	____
Explains procedures to patient	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)

N/A 1 2 3 4 5

C. Oral Case Presentation

	Not Done	Done Incompletely	Done Needs Imprvmt.
Presents clear, concise, organized statement of patient problems	____	____	____
Includes all major active problems of patient	____	____	____
Includes psychosocial profile	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)

N/A 1 2 3 4 5

D. Written Patient Record

	Not Done	Done Incompletely	Done Needs Imprvmt.
Writes in a ledgible, accurate and organized manner	____	____	____
Uses P O M R or Classical Format	____	____	____
Includes all pertinent data	____	____	____
Includes initial problem list	____	____	____
Includes psychosical profile	____	____	____

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle) N/A 1 2 3 4 5

E. Techniques of Clinical Procedures and Skills

	Not Done	Done Incompletely	Done Needs Imprvmt.
Selects and/or performs laboratory studies	____	____	____
Accurately performs clinical tasks	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle) N/A 1 2 3 4 5

F. Professional Responsibility

	Not Done	Done Incompletely	Done Needs Imprvmt.
Reliable and responsible	____	____	____
Recognizes limitations	____	____	____
Dresses appropriately	____	____	____
Acknowledges "not knowing"	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle) N/A 1 2 3 4 5

G. Factual Knowledge and Concepts

	Not Done	Done Incompletely	Done Needs Imprvmt.
Demonstrates evidence of outside reading and study	____	____	____
Correlates didactic concepts with clinical application	____	____	____
Demonstrates knowledge of major primary care illnesses (see #10 on objectives)	____	____	____

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle)	H. Problem Solving and Critical Thinking	Not Done	Done Incompletely	Done Needs Imprvmt.
N/A 1 2 3 4 5	Synthesizes and analyzes all clinical data correctly (hx., p.e., lab., etc.)	____	____	____
	Correlates clinical and laboratory data	____	____	____
	Accurately determines major active problems	____	____	____
	Distinguishes normal from abnormal findings	____	____	____
	Proposes a tentative assessment	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)	I. Assessment	Not Done	Done Incompletely	Done Needs Imprvmt.
N/A 1 2 3 4 5	Formulates a differential diagnosis	____	____	____
	Justifies selection of diagnosis	____	____	____

COMMENTS AND CRITICAL INCIDENTS

Rating (Please circle)	J. Ability to Form Management Plan	Not Done	Done Incompletely	Done Needs Imprvmt.
N/A 1 2 3 4 5	Designs most effective program of care	____	____	____
	Selects appropriate teaching methods for patient education	____	____	____
	Selects appropriate consultations and referrals	____	____	____
	Selects effective therapeutic modalities	____	____	____

COMMENTS AND CRITICAL INCIDENTS

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Rating (Please circle)

N/A 1 2 3 4 5

K. Ability to Implement Management Plan

	Not Done	Done Incompletely	Done Needs Imprvmt.
Implements plan consistently and appropriately	____	____	____
Arranges for follow-up	____	____	____
Carries out teaching methods of patient education	____	____	____
Monitors effects and effectiveness of plan	____	____	____

COMMENTS AND CRITICAL INCIDENTS

PRECEPTORS SIGNATURE

STUDENTS SIGNATURE

JC/phm
9/76

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THE JOHNS HOPKINS UNIVERSITY SCHOOL OF HEALTH SERVICES
HEALTH ASSOCIATE PROGRAM

BEHAVIORAL SCIENTIST GUIDELINES FOR CLINICAL EVALUATION OF STUDENTS
PATIENT EDUCATION

BY: BERNICE BENNETT

I. Educational Diagnosis (First Semester)

Beginning Interview

1. Establishes rapport
2. Uses open-ended questions to ascertain information
3. Collects appropriate demographic information.
   a. age, sex, race (include religion)
   b. education
   c. income, etc.
* 4. Finds out what patient already knows about illness and treatment plan. (If applicable, have patient explain and demonstrate what he/she can do or knows).
* 5. Identify misconceptions, fears and attitudes.
* 6. Identify any resources within patients community or within hospital that could help in his treatment plan.
* 7. Identifies other family members (and friends) who will be involved in the patient treatment plan.
* 8. Identify obstacles in following treatment plan. (ex. can't read, hearing problems, money problems, etc.)
* 9. Identify patients past attempts to solve problem.
* 10. Determine patient-willingness and interest to learn.

II. Establish Educational Goals

1. Assess patient and/or families objectives for learning.
* 2. Assess what patient needs to know and do. (Including need for outside resources)
3. Summarizes with patient educational diagnosis. (include deficiencies in knowledge and skills of patients family.)
4. Uses appropriate vocabulary. (Avoids talking over-patients head or talking down to patient.)
5. Encourages patient to ask questions.
6. Identify obstacles in reaching goals.

III. Select Appropriate Method of Teaching

1. Patient assigned to groups.
2. Individual instructions planned.
* 3. Select appropriate referral strategy (when outside resources are involved)

IV. Carry Out Educational Plan

1. Gives correct information in a manner that the patient can understand.
2. Gives only relevant information. (Does not overload).
3. Responds to questions appropriately.
4. Acknowledges when he/she does not know the answer to questions ask by patients.
5. Informs patient about the probable clinical course of his illness.
6. Prepares patient for anticipated problems or complications.
7. Explains steps in medical examination.
8. Checks for patient understanding.
9. Uses appropriate pace.
10. Follows logical progression in presentation of information (i.e. from simple to complex)
11. Refer patient when appropriate. (State reason to patient)

End of Session - Evaluate Patient Learning.

1. Re-assess patient knowledge (Have patient demonstrate and/or explain treatment plan).
2. Encourage patient to ask questions.
3. Make clear to patient what will happen next.
4. Re-appoint patient for follow-up visit.
5. Encourage telephone call or office visit.
6. Ends educational session.

* Pre-req. - First semester Junior Year

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THE JOHNS HOPKINS UNIVERSITY HEALTH ASSOCIATE PROGRAM

CLINICAL EVALUATION OF STUDENTS BY BEHAVIORAL SCIENTISTS

BY: PENNY WILLIAMSON

EX = EXCELLENT (A)——Demonstrates excellent work; requires little supervision
G = GOOD (B)——Exceeds minimal expectations
AV = AVERAGE (C)——Performs with minimal competency only; needs improvement
BA = BELOW AVERAGE (D)——Definitely weak in this area; needs close supervision
P = POOR (F)——Not competent; requires constant supervision in this area
NA——Not applicable; not done and/or not evaluated during this rotation

INTERVIEW	EVALUATION	COMMENTS (CRITICAL INCIDENTS)
observe social amenities	EX. G. AV. B.A. P. NA.	
sensitivity to patient's feelings	EX. G. AV. B.A. P. NA.	
interchange of cognitive content	EX. G. AV. B.A. P. NA.	
organization (structure)	EX. G. AV. B.A. P. NA.	
attention to environment, nonverbal factors	EX. G. AV. B.A. P. NA.	
gathers personal and social Hx.	EX. G. AV. B.A. P. NA.	
collects appropriate psychological and social data around specific symptoms and/or illness	EX. G. AV. B.A. P. NA.	
A. Factors which may have contributed:		
B. Effect on personal/professional life to date		
pt.ed: educational diagnosis	EX. G. AV. B.A. P. NA.	
establish educational goals	EX. G. AV. B.A. P. NA.	
select appropriate teaching method	EX. G. AV. B.A. P. NA.	
carry out plan	EX. G. AV. B.A. P. NA.	
evaluate patient learning	EX. G. AV. B.A. P. NA.	
PHYSICAL EXAMINATION		
observance of social amenities	EX. G. AV. B.A. P. NA.	
sensitivity to patients feelings	EX. G. AV. B.A. P. NA.	
interchange of cognitive content	EX. G. AV. B.A. P. NA.	
organization	EX. G. AV. B.A. P. NA.	
attention to environment, nonverbal factors	EX. G. AV. B.A. P. NA.	
pt.ed: educational diagnosis	EX. G. AV. B.A. P. NA.	
establish educational goals	EX. G. AV. B.A. P. NA.	
select method of teaching	EX. G. AV. B.A. P. NA.	
carry out plan	EX. G. AV. B.A. P. NA.	
evaluate patient learning	EX. G. AV. B.A. P. NA.	
ORAL & WRITTEN PRESENTATIONS		
organization, brief O	EX. G. AV. B.A. P. NA.	
relevant, confident, ability to communicate with colleagues W	EX. G. AV. B.A. P. NA.	
presents personal and social Hx. O	EX. G. AV. B.A. P. NA.	
presents & integrates appropriate psychological and social data around specific symptoms and/or disease: A) Factors which many have contributed B) Effect of symptoms/illness on personal &/or professional life. O	EX. G. AV. B.A. P. NA.	
W	EX. G. AV. B.A. P. NA.	
PROFESSIONAL RESPONSIBILITY		
motivation, accountability, recognizes limitations, confidentially, accepts responsibility for own action, reliability, dress, attendence, ability to work with other health professionals.	EX. G. AV. B.A. P. NA.	

Difficulty of patients seen _____

Signature: Soc. Gen. _____ Student _____ Date

©1/77 Health Associate Program, Johns Hopkins University School of Health Services

CLINICAL EVALUATION OF STUDENTS BY BEHAVIORAL SCIENTISTS

EX = EXCELLENT (A)——— Demonstrates excellent work; requires little supervision
G = GOOD (B)——— Meets usual expectations
AV = AVERAGE (C)——— Performs with minimal competency only; needs improvement
BA = BELOW AVERAGE (D)——— Definitely weak in this area; needs close supervision
P = POOR (F)——— Not competent, requires constant supervision in this area
NA——— Not applicable; not done, and/or not evaluated during this rotation

ASSESSMENT AND MANAGEMENT PLAN	EVALUATION	COMMENTS (CRITICAL INCIDENTS)
incorporates pertinent psychological and social data into assessment and plan: A. Factors which may contribute to symptoms and/or disease B. Effect of symptoms on personal and/or professional life	EX. G. AV. B.A. P. NA.	
ted. - establish educational goals	EX. G. AV. B.A. P. NA.	
IMPLEMENTING STRATEGIES		
observance of social amenities	EX. G. AV. B.A. P. NA.	
sensitivity to patient's feelings	EX. G. AV. B.A. P. NA.	
interchange of cognitive content	EX. G. AV. B.A. P. NA.	
organization	EX. G. AV. B.A. P. NA.	
attention to environmental, non-verbal factors	EX. G. AV. B.A. P. NA.	
discusses pertinent psychological and social factors A. Factors which may contribute to symptoms and/or disease (and which may continue to do so). B. Effect of symptoms and/or disease on personal and professional life.	EX. G. AV. B.A. P. NA.	
ed. - establish educational goals	EX. G. AV. B.A. P. NA.	
select appropriate teaching method	EX. G. AV. B.A. P. NA.	
carry out plan	EX. G AV. B.A. P. NA.	
evaluate patient learning	EX. G. AV. B.A. P. NA.	
PROBLEM SOLVING AND CRITICAL THINKING		
ability to analyze data accurately arrive at the most likely hypotheses, known consequences of action taken innovative use of resources	EX. G. AV. B.A. P. NA.	

Difficulty of patients seen_____

Signature: Soc. Gen. _____ Student_____ Date_____

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PRECEPTOR EVALUATION BY STUDENT

PRECEPTOR_____ STUDENT_____
SITE_____
DATES_____

			CRITICAL INCIDENTS
1. Did the preceptor have an understanding of his/her role with regard to the teaching program?	Yes	No	
2. Did preceptor provide enough supervision during the history and physical examination?	Yes	No	
3. Did preceptor provide informal feedback at each session?	Yes	No	
4. Did preceptor require an oral case presentation?	Yes	No	
5. Did preceptor read and provide constructive guidance on written case?	Yes	No	
6. Did preceptor attempt to provide student with opportunity to practice clinical skills?	Yes	No	
7. Did preceptor apply psycho-social concepts in an integrated fashion to clinical practice?	Yes	No	
8. Did preceptor provide guidance in areas of problem solving?	Yes	No	
9. Does preceptor represent, to you, a good role model in terms of professionalism, responsibility, etc.?	Yes	No	
10. Does this preceptor provide additional learning resources such as handouts, participation in conferences, seeking out experiences for students, additional "people resources"?	Yes	No	
11. Did the preceptor remain available to students?	Yes	No	
12. Did the preceptor seem to enjoy his/her teaching role?	Yes	No	
13. Additional criteria you feel to be important or relevant:			

CPT
11/75

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SITE EVALUATION BY STUDENTS

SITE:_____ DATE_____

		CRITICAL COMMENTS
1. Suitable patients are available at this site (complete history possible to obtain) so that objectives of history taking were met.	Yes No	
2. Patients were notified and/or were willing to participate in the physical examination.	Yes No	
3. Site offers opportunity to practice skills (please state some of the skills practiced).	Yes No	
4. Staff has some understanding and/or are receptive of the role of the mid-level health care practitioner.	Yes No	
5. Recommendations re: Continuation of the site for Health Associate students.		
6. Site offers opportunity to utilize your time, observing someone else, attending rounds or conferences, independent study or informal presentations.		
7. Additional criteria you feel is important or relevant:		
8. Excluding inpatient sites, were you given a room to examine your patient?		

CPT
10/76

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PHYSICIAN'S ASSOCIATE PROGRAM

Clinical Rotation
Student Checklist

The Physician's Associate student checklist has been developed in an attempt to lend consistency to our training efforts and document the student's performance during the clinical phase (14 months) of training. The checklist that follows presents various skills which should be performed by the student under the direct and responsible supervision of the physician or in areas noted a trained professional whose discipline covers the appropriate task. An "unsatisfactory" or failing grade ("D or "F) for any task will not mean failure on the rotation but will serve to notify the program and the student's next supervisor of the student's past performance. This list is to be returned to the Physician's Associate Program office at the Health Sciences Center in Oklahoma City at the end of the fifth week of each clinical rotation. The task completed on the present rotation will be recorded on a master list and a copy of the master list returned. The original will go in the student's file.

Letter Grade	Definition	Letter Grade	Definition
A	Excellent. Able to do task independently*.	C	Good, perform only under immediate supervision.
B	Performed well, able to do with minimal supervision.	D, F	Unsatisfactory work; Needs further instruction.

*As noted in the grade system above the term independently is not to be construed as independent practice. The physician's assistant is always under the supervision of and responsible to a physician.

	Letter Grade	Date	P.A. Initial	Signature of Observer
I. Perform the following laboratory procedures with speed and accuracy:				
Hemoglobin				
Micro-hematocrit				
White blood count				
Differential WBC				
Clotting time				
Sickle cell prep				
Routine urinalysis including Microscopic exam				
Urine specific gravity				
Feces for ova and parasites				
Feces for occult blood				
Urine and gastric contents for occult blood				
On sputum/blood/or urine perform stains:				
Wright's				
Grams				
Ziel-Nielsen (AFB)				
Vaginal smear for Trichomonas				
Vaginal smear for yeast				

Comments:

II. Perform the following clinical/ diagnostic procedures:				
Venipuncture				
Arteriopuncture				
Start IV therapy				
Insert CVP catheter				
Remove CVP catheter				
Insert nasogastric catheter				
Insert urinary catheter				
Remove urinary catheter				
Obtain culture for G.C. on:				
Male				
Female				
Obtain PAP smear				
Obtain blood culture				
Obtain 12 lead EKG				
Administer injections under supervision of R.N., M.D., or P.A.				
Intramuscular				
Subcutaneous				
Intradermal				

	Letter Grade	Date	P.A. Initial	Signature of Observer
II. Continued . . .				
Administer skin tests and record reaction on chart				
Cleanse and Debridement of wound				
Administer local infilt anesthesia ("to suture").				
Suture minor superficial laceration.				
Provide appropriate tetanus therapy				
Practice aseptic technique by:				
gowning and gloving				
surgical scrub.				
proper drapping of pt..				
application of wound dressing .				
Apply following casts:				
Walking				
Long-leg.				
Short-arm				
Long-arm (hanging).				

Comments:

	Letter Grade	Date	P.A. Initial	M.D. Signature
III. The physician may elect (not required) to instruct the student and the student may perform only under direct and immediate supervision the following diagnostic tests:				
Cut down.				
Thoracentesis				
Paracentesis.				
Lumbar puncture				
Joint aspiration/injection. . .				
Lymph node biopsy				
Liver biopsy.				
Proctoscopy				
I.V.P..				
BSP				

Comments:

IV. Recognition of and initiation of appropriate therapy in the following life threatening situations while awaiting the arrival of a physician:	Letter Grade	Date	P.A. Initial	M.D. Signature
Varying levels of consciousness				
Possible spinal column fx. or dislocations.				
Multiple fx.'s with possible nerve and/or arterial vessel damage.				
Cardiac arrest.				
Acute chest pain, possible M.I.				
Cardiac arrhythmias				
Acute airway obstruction. . . .				
Acute asthma.				
Shock				
External hemorrhage from wound.				
Internal hemorrhage with G.I. bleeding.				
Acute abdominal pain.				
Acute urinary retention				
Sudden vascular occlusion . . .				
Vaginal hemorrhage.				
Spontaneous abortion.				
Breech birth.				
Impending childbirth.				
Seizure				
Acute glaucoma.				
1st degree and 2nd degree burns of significant area . . .				
3rd degree burns of significant area or location				
Accidental or deliberate ingestion of poisonous/dangerous substances.				
Anaphylactic reaction				
High Fever				
Hypertensive crisis				
Acute depression.				
Suicidal risk				

Comments:

For Office Use Only:

Passing _____

Total Score _____

PHYSICIAN'S ASSOCIATE PROGRAM
CLINICAL ROTATION EVALUATION FORM

Student's Name: _____

Rotation (Area/Practice): _____

Dates (Month & Year): _____

Instructions for Supervisors and Students:

Please grade the student's performance and knowledge below and comment on his or her attributes as well as problem areas. A "D" or "F" in any category below is a failing grade and necessitates: (1) failure on the rotation leading to extension in the program, and (2) that the student be put on probation for the next rotation. A Failing grade in any category while already on probation will mean: (1) failure on the rotation, and (2) expulsion from the program. Other grades as noted represent:

Letter grade	Definition	Letter grade	Definition
A	Excellent	D	Marginal Work, Failing grade
B	Good		
C	Average	F	Unacceptable/ Poor, Failing Grade
		N/O	Not Observed

Cognitive Skills

A. Basic knowledge, ability to interpret historical, physical, and laboratory data.

[A] [B] [C] [D] [F] [N/O]

B. Recognition of and ability to solve problems and to assume patient management responsibilities.

[A] [B] [C] [D] [F] [N/O]

C. Ability to use good clinical judgement and common sense.

[A] [B] [C] [D] [F] [N/O]

Psychomotor Skills

A. Perform data base collection (detailed history & physical examinations).

[A] [B] [C] [D] [F] [N/O]

B. Perform laboratory and diagnostic tests, (venipuncture, start IV's, WBC/Diff., LP's, and etc.)

[A] [B] [C] [D] [F] [N/O]

C. Ability to recognize and initiate therapy in life threatening med./surg. emergencies.

[A] [B] [C] [D] [F] [N/O]

Commitment

A. Motivation as P.A. student.

[A] [B] [C] [D] [F] [N/O]

B. Acceptance of responsibility and overall reliability.

[A] [B] [C] [D] [F] [N/O]

Interpersonal Relationships

A. "Professional attitude" and understanding of his or her "role" as a P.A. (recognition of limitations).

[A] [B] [C] [D] [F] [N/O]

B. Student honesty and sincerity.

[A] [B] [C] [D] [F] [N/O]

C. Appropriate rapport with patients and their families (empathy & compassion for the patient and his family).

[A] [B] [C] [D] [F] [N/O]

D. Ability to function with the health team/appropriate rapport with peers and supervisors.

[A] [B] [C] [D] [F] [N/O]

Comments: Please put additional comments on back.

_____

_____

_____

_____

_____

_____ Student recommended for honors.

_____ Evaluation form reviewed with student.

Signatures

_____ _____

Supervisor Student

CLINICAL ROTATION EVALUATION QUESTIONNAIRE
(Student)
Physician's Associate Program
University of Oklahoma Health Sciences Center

Rotation _____ Date _____

Student _____ Primary Supervisor _____

The questions below deal with the quality of instruction and experience derived from a clinical rotation in the P.A. program. Indicate your rating of each characteristic by marking the appropriate space on the answer sheet. The exact point at which you rate is less important than the general impression. Write in beside each rated question any additional comments which you wish to make.

Rated Questions	Comments
1. Did you clearly understand the aims and objectives of the rotation? 1 2 3 4 5 6 7 No Partly Completely	1. _____
2. To what degree were course objectives reached? 1 2 3 4 5 6 7 None Partly Completely	2. _____
3. Was there effective and responsible supervision? 1 2 3 4 5 6 7 No Appropriate Too much	3. _____
4. Was there a fair exchange, as in any "on the job" learning experience, of service and education? 1 2 3 4 5 6 7 No Partly Yes/Completely	4. _____
5. Do you deem the hospital/clinic/office facilities adequate for your purposes as a student? 1 2 3 4 5 6 7 Not at all Partly Completely	5. If your answer is 3 or below, why not? _____

Rated Questions	Comments
6. In your judgment was there an adequate medical library and/or reserve of textbooks for your use? 1 2 3 4 5 6 7 None Partly Completely	6. What textbooks would you suggest to compliment the facility/rotation?
7. Were there relevant planned, teaching conferences either in the hospital or in the physician's office? 1 2 3 4 5 6 7 Poor Average Excellent	7. If not, how could they best be instituted?
8. Were the assigned readings correlated well with the rotation and helpful? 1 2 3 4 5 6 7 Not at all Partly Excellent	8. What suggestions do you have for assigned readings for this rotation?
9. Did the examination questions reflect and satisfactorily measure the achievements on the rotation? 1 2 3 4 5 6 7 Not at all Partly Completely	9. Why or why not?
10. Did you enjoy taking the rotation? 1 2 3 4 5 6 7 Not at all Partly Completely	10. If not, why?
11. What is your perception of the value of this rotation? 1 2 3 4 5 6 7 No Value Partly Extremely Valuable	11. How might the rotation be changed (if at all) to be of more value?

Additional Comments:

PHYSICIAN'S ASSOCIATE PROGRAM

Clinical Rotation
Student Checklist

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A	Excellent. Able to do task independently*.	C	Good, perform only under immediate supervision.
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Sickle cell prep				
Routine urinalysis including Microscopic exam				
Urine specific gravity				
Feces for ova and parasites				
Feces for occult blood				
Urine and gastric contents for occult blood				
On sputum/blood/or urine perform stains:				
Wright's				
Grams				
Ziel-Nielsen (AFB)				
Vaginal smear for Trichomonas				
Vaginal smear for yeast				

Comments:

_____

_____

_____

II. Perform the following clinical/ diagnostic procedures:				
Venipuncture				
Arteriopuncture				
Start IV therapy				
Insert CVP catheter				
Remove CVP catheter				
Insert nasogastric catheter				
Insert urinary catheter				
Remove urinary catheter				
Obtain culture for G.C. on:				
Male				
Female				
Obtain PAP smear				
Obtain blood culture				
Obtain 12 lead EKG				
Administer injections under supervision of R.N., M.D., or P.A.				
Intramuscular				
Subcutaneous				
Intradermal				

	Letter Grade	Date	P.A. Initial	Signature of Observer
II. Continued . . .				
Administer skin tests and record reaction on chart				
Cleanse and Debridement of wound				
Administer local infilt anesthesia ("to suture").				
Suture minor superficial laceration.				
Provide appropriate tetanus therapy				
Practice aseptic technique by:				
gowning and gloving				
surgical scrub.				
proper drapping of pt..				
application of wound dressing .				
Apply following casts:				
Walking				
Long-leg.				
Short-arm				
Long-arm (hanging).				

Comments:

_____

_____

	Letter Grade	Date	P.A. Initial	M.D. Signature
III. The physician may elect (not required) to instruct the student and the student may perform only under direct and immediate supervision the following diagnostic tests:				
Cut down.				
Thoracentesis				
Paracentesis.				
Lumbar puncture				
Joint aspiration/injection. . .				
Lymph node biopsy				
Liver biopsy.				
Proctoscopy				
I.V.P..				
BSP				

Comments:

_____

_____

_____

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Acute chest pain, possible M.I.				
Cardiac arrhythmias				
Acute airway obstruction. . . .				
Acute asthma.				
Shock				
External hemorrhage from wound.				
Internal hemorrhage with G.I. bleeding.				
Acute abdominal pain.				
Acute urinary retention				
Sudden vascular occlusion . . .				
Vaginal hemorrhage.				
Spontaneous abortion.				
Breech birth.				
Impending childbirth.				
Seizure				
Acute glaucoma.				
1st degree and 2nd degree burns of significant area . . .				
3rd degree burns of significant area or location				
Accidental or deliberate ingestion of poisonous/dangerous substances.				
Anaphylactic reaction				
High Fever				
Hypertensive crisis				
Acute depression.				
Suicidal risk				

Comments:

For Office Use Only:

Passing _____

Total Score _____

PHYSICIAN'S ASSOCIATE PROGRAM
CLINICAL ROTATION EVALUATION FORM

Student's Name: _____

Rotation (Area/Practice): _____

Dates (Month & Year): _____

Instructions for Supervisors and Students:

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A. Basic knowledge, ability to interpret historical, physical, and laboratory data.

[A] [B] [C] [D] [F] [N/O]

B. Recognition of and ability to solve problems and to assume patient management responsibilities.

[A] [B] [C] [D] [F] [N/O]

C. Ability to use good clinical judgement and common sense.

[A] [B] [C] [D] [F] [N/O]

Psychomotor Skills

A. Perform data base collection (detailed history & physical examinations).

[A] [B] [C] [D] [F] [N/O]

B. Perform laboratory and diagnostic tests, (venipuncture, start IV's, WBC/Diff., LP's, and etc.)

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C. Ability to recognize and initiate therapy in life threatening med./surg. emergencies.

[A] [B] [C] [D] [F] [N/O]

Commitment

A. Motivation as P.A. student.

[A] [B] [C] [D] [F] [N/O]

B. Acceptance of responsibility and overall reliability.

[A] [B] [C] [D] [F] [N/O]

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A. "Professional attitude" and understanding of his or her "role" as a P.A. (recognition of limitations).

[A] [B] [C] [D] [F] [N/O]

B. Student honesty and sincerity.

[A] [B] [C] [D] [F] [N/O]

C. Appropriate rapport with patients and their families (empathy & compassion for the patient and his family).

[A] [B] [C] [D] [F] [N/O]

D. Ability to function with the health team/appropriate rapport with peers and supervisors.

[A] [B] [C] [D] [F] [N/O]

Comments: Please put additional comments on back.

_____

_____

_____

_____

_____

_____ Student recommended for honors.

_____ Evaluation form reviewed with student.

Signatures

_____ _____

Supervisor Student

CLINICAL ROTATION EVALUATION QUESTIONNAIRE
(Student)
Physician's Associate Program
University of Oklahoma Health Sciences Center

Rotation _____ Date _____

Student _____ Primary Supervisor _____

The questions below deal with the quality of instruction and experience derived from a clinical rotation in the P.A. program. Indicate your rating of each characteristic by marking the appropriate space on the answer sheet. The exact point at which you rate is less important than the general impression. Write in beside each rated question any additional comments which you wish to make.

Rated Questions	Comments
1. Did you clearly understand the aims and objectives of the rotation? 1 2 3 4 5 6 7 No Partly Completely	1. _____
2. To what degree were course objectives reached? 1 2 3 4 5 6 7 None Partly Completely	2. _____
3. Was there effective and responsible supervision? 1 2 3 4 5 6 7 No Appro-priate Too much	3. _____
4. Was there a fair exchange, as in any "on the job" learning experience, of service and education? 1 2 3 4 5 6 7 No Partly Yes/Completely	4. _____
5. Do you deem the hospital/clinic/office facilities adequate for your purposes as a student? 1 2 3 4 5 6 7 Not at all Partly Completely	5. If your answer is 3 or below, why not? _____

Rated Questions	Comments
6. In your judgment was there an adequate medical library and/or reserve of textbooks for your use? 1 2 3 4 5 6 7 None Partly Completely	6. What textbooks would you suggest to compliment the facility/rotation?
7. Were there relevant planned, teaching conferences either in the hospital or in the physician's office? 1 2 3 4 5 6 7 Poor Average Excellent	7. If not, how could they best be instituted?
8. Were the assigned readings correlated well with the rotation and helpful? 1 2 3 4 5 6 7 Not at all Partly Excellent	8. What suggestions do you have for assigned readings for this rotation?
9. Did the examination questions reflect and satisfactorily measure the achievements on the rotation? 1 2 3 4 5 6 7 Not at all Partly Completely	9. Why or why not?
10. Did you enjoy taking the rotation? 1 2 3 4 5 6 7 Not at all Partly Completely	10. If not, why?
11. What is your perception of the value of this rotation? 1 2 3 4 5 6 7 No Value Partly Extremely Valuable	11. How might the rotation be changed (if at all) to be of more value?

Additional Comments:

APPENDIX H

Selected Bibliography on Educational Curriculum Development Activities

Selected Bibliography on Educational Curriculum Development Activities

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APPENDIX I

Selected Bibliography of Textbooks Used in Physician Assistant Training Programs

Selected Bibliography of Textbooks Used in Physician Assistant Training Programs

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